

API-Cecomp Group *n'fo*

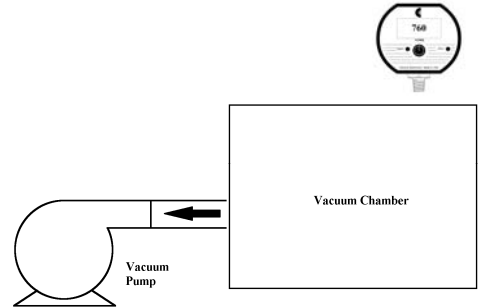
Technical Support Doc 1003

Calibrating DPG1000 series gauges with a 760TORRA range

Operational Description

Absolute Reference gauges use absolute vacuum as a zero reference and thus will read zero at high vacuum and atmospheric pressure with the gauge port open to ambient. The gauge's reading will vary with barometric pressure and altitude. Since barometric pressure is constantly changing, the gauge's reading will continuously change when the gauge port is open to atmosphere, or if the system to which it is attached changes in volume or pressure with response to atmospheric pressure changes. When open to atmosphere the gauge will indicate atmospheric pressure. This may be in the range of 680 to 800 torr depending upon local atmospheric pressure. (Note that this is not the same as the local barometer reading). As vacuum is applied, the readings will decrease, eventually reaching zero when full vacuum is applied. Absolute reference gauges are not available in ranges below 760 TORR because the transducer would always be in an over range condition at normal atmospheric pressures

*Atmospheric pressure is affected by high and low pressure weather systems and how high the measuring station is above sea level. For weather barometer readings to make sense it is desirable to remove the effect of weather station altitude. A weather barometer reading is corrected to a hypothetical sea level reading by taking into account the altitude, pressure reading and temperature. An altimeter reading is corrected by taking into account the altitude and pressure reading.



Precautions

- ◆ Install or remove gauge using wrench on hex fitting only. Do not attempt to tighten or loosen by turning housing or any other part of the gauge.
- ◆ Use fittings appropriate for the pressure range of the gauge as indicated on the rear label.
- ◆ Due to the hardness of 316 stainless steel, it is recommended that a thread sealant be used to ensure leak-free operation.
- ◆ NEVER insert objects into the gauge port or blow out with compressed air. Permanent damage not covered by warranty will result to the sensor.
- ◆ These products do not contain user serviceable parts except for replaceable batteries as specified in the instructions. Contact us for repairs, service, or refurbishment.

Preparation

1. Please refer to the data sheet for specifications, installation, wiring, and complete operating instructions. Data sheets are available at www.cecomp.com
2. Calibration should only be performed by qualified individuals using appropriate calibration standards and procedures.
3. The calibration equipment should be at least four times more accurate than the gauge being calibrated. The calibration system must be able to generate and measure pressure/vacuum over the full range of the gauge. A vacuum pump able to produce a vacuum of 100 microns (0.1 torr or 100 millitorr) or lower is required for zero calibration of absolute gauges.
4. It is good practice to install fresh batteries before calibrating battery-powered gauges.
5. Allow the gauge to equalize to normal room temperature for at least 20 minutes before calibration.

Calibration Potentiometer Access

Access the calibration potentiometers as indicated in the product data sheet. Contact Customer Service to purchase replacement potentiometer covers if needed.

- ◆ Remove the black plastic caps to expose the calibration potentiometers.



Calibration Procedure

1. Apply full vacuum to the gauge. Adjust the Zero potentiometer for a display indication of zero.
2. Apply full-scale pressure. Set the pressure to obtain a calibrator reading of approximately 760 torr and adjust the Span potentiometer for a display indication equal to your calibrator's pressure reading. You may use atmospheric pressure for span calibration provided your calibration equipment can read it accurately.
 - Note: As stated in operational description be aware that atmospheric pressure constantly changes as it is affected by high and low pressure weather systems and how high the measuring station is above sea level.
3. Verify pressure indications at 0%, 25%, 50%, 75%, and 100% of full scale and repeat calibration steps 1 and 2 as needed to achieve best accuracy over desired operating range.