

PROXIMITY PROBE VALIDATION

GAP VOLTAGE AND CABLING ERRORS

PROBLEM

Cabling errors cause incorrect gap voltage. This DC voltage measurement indicates the distance from probe tip to shaft. A cabling error makes it appear as if the prox probe is installed too close or too far from the rotating shaft. When the position is adjusted to correct gap voltage, the probe is inadvertently moved and the shaft is no longer in the center of its measurement range. This compounds the dynamic error and further compromises alert and alarm thresholds designed to protect assets such as gas and steam turbines.

SOLUTION

Ensure the validity of the entire vibration protection channel by simulating shaft motion at actual running speeds using The Modal Shop's Portable Vibration Calibrators. These rugged and lightweight shakers run on battery power for all-day usage in the field. Proximity probes are easily mounted and calibrated against a 4140 steel target per the American Petroleum Institute (API) 670 standard. Displacement, scaled in mils or microns (μm) peak to peak, is adjusted by turning a knob and is displayed along with frequency (in Hz or CPM) at all times. Accuracy is ensured via a NIST-traceable internal quartz reference accelerometer and ISO 17025-accredited calibration certificate.

BENEFIT

Utilizing The Modal Shop's Portable Vibration Calibrator as part of a regular calibration process helps provide confidence that vibration monitoring systems relying upon proximity probes are protecting the plant's critical assets effectively. Efficiency is increased when the vibration, maintenance, or operations teams are not chasing false trips. Downtime is also decreased by ensuring alert and alarm thresholds are properly programmed. The ability to create and store calibration records in-house demonstrates proof of improved quality and delivers peace of mind that equipment is operating properly.



Incorrect cabling can trip alarms too early or late



Model 9110D Portable Vibration Calibrator discovers a proximity probe cabling error despite correct gap voltage



9110D Portable Vibration Calibrator also checks accelerometers and velocity sensors