LVDT SENSORS

Description

Kavlico LVDTs operate using a non-contacting induction principle, providing friction free motion and nearly infinite resolution. These sensors have been refined and improved for over 50 years, making Kavlico LVDTs the standard for flight and engine control position measurements. Kavlico is the largest manufacturer of matched multiple channel sensors for redundancy.

Multiple channels are provided in a variety of housing designs that can be directly mounted on the airframe control surfaces and cockpit controls, or provided as an integral part of a servo valve or main ram actuator. Over 1 million Kavlico LVDTs are installed in aircraft worldwide.

Features

- Single & multiple channel designs (tandem or parallel arrangement)
- Linear displacement from .001" to 60"
- Stainless steel construction or lightweight aluminum
- Operating pressures up to 10,000 psi (15.000 psi burst pressure)
- High temperature & vibration environments (per MIL-STD 810 or RTCA DO-160)
- High accuracy (± 0.25% full scale)
- Infinite resolution
- Hermetic designs available
- Linearity (± 0.1% full scale)
- Fault detection
- High reliability (single channel MTBF of 1,000,000 hrs. typical)

Applications

- Flight control actuators
- Valves
- Nose wheel steering systems
- Cockpit controls
- Engine bleed air systems
- Fuel controls
- Fly-by-wire systems
- Brake-by-wire systems
- Environmental control systems
- Thrust reverser
- Engine control actuators
- Engine fuel control

GLOSSARY OF TERMS

Sensitivity - The slope of a best-fit straight line drawn through the output data. An LVDT is a ratiometric device and the sensitivity should be expressed as the ratio of the volts out (V1-V2), per volt in (VE or V1+V2), per degree of rotation (V/V/ degree).

Accuracy - The maximum allowed deviation from the nominal output, when the output is taken per the above sensitivity definition. Typically specified as a ± percent of full scale.

Linearity - The maximum deviation of any calibration point from a specified straight line. The error is usually expressed as a percentage of Full Scale output. The most commonly used line is the "Best Fit Straight Line" (BFSL).

Tracking - The uniformity of performance between channels of multiple channel LVDTs. Each channel's output is compared and the maximum difference between multiple channels is termed "tracking". Tracking is normally expressed as a percentage of Full Scale.

Crosstalk - The term used for multiple channel units to describe the voltage produced in the secondary of one channel by the primary excitation of another channel.

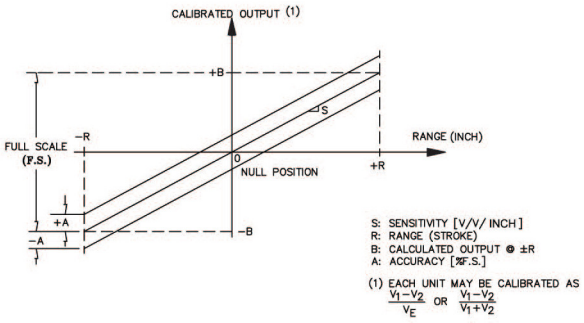
Full Scale - The algebraic difference between the nominal outputs at the ends of the electrical stroke. (Ref. Instrument Society of America, ISA - S37.1-1975)

Temperature Coefficient - The % change in the LVDT sensitivity over a temperature range. Usually defined as a percentage per 100°F max. Example: 0.25%/100°F.

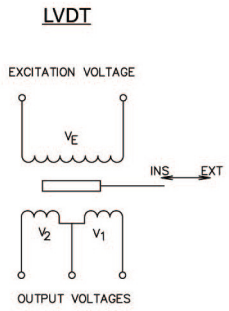
DIMENSIONS

Dimensions in mm [Inch]

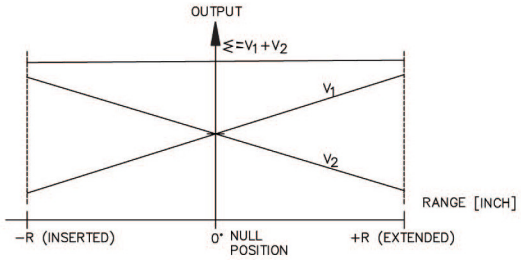
Typical Output (Calibrated Range)



Electrical Schematic



Nominal Individual Output



Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA.

CONTACT US

Americas
+1 (805) 716-0322
info.kavlico@sensata.com