RVDT SENSORS

Description

Kavlico RVDTs are the industry standard for angular and rotary measurements in space, aerospace & industrial applications. The lightweight, robust sensors are capable of up to ±80°angular range in single or multiple channel designs. RVDTs with integral miniaturized anti-backlash gear boxes are available for applications with higher angular displacements or multiple revolutions. DC/DC RVDTs are also available for a variety of aerospace applications.

Kavlico RVDTs have been qualified to 80g vibration and 400°F for some engine applications and can be designed to operate in a pressurized environment. Hermetically sealed RVDTs capable of containing hydraulic pressure are also available.

Features

- High reliability (MTBF of 1,000,000 hrs. typical)
- High accuracy (1 0.25% full scale)
- Stable output as high as 80g vibration
- Pressurized & hermetically sealed designs available
- Precision alignment or coupling features
- Angular & rotary measurements
- Multiple channels (tandem or parallel)
- Single cycle (± 801 or dual cycle (± 40)
- Non-contact brushless rotor design
- Infinite angular displacement with gear reduction designs
- Size 8 or size 11 servo or flange mount
- AC/AC or DC/DC models
- Lightweight, robust designs, small package
- Constructed for stability and interchangeability over its life
- Qualified to RTCA/DO-160 and MIL-STD-810 specs

Applications

- Flight control actuators
- Hydraulic & Fuel 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.

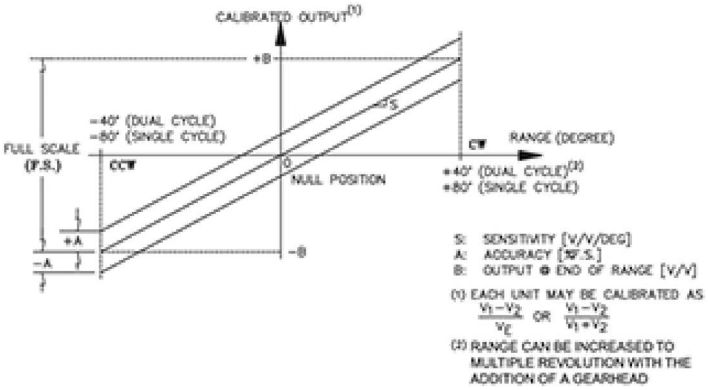
Full Scale - The algebraic difference between the nominal outputs at the ends of the electrical stroke. (Ref. Instrument Society of America, ISA - S37.1-1975)

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.

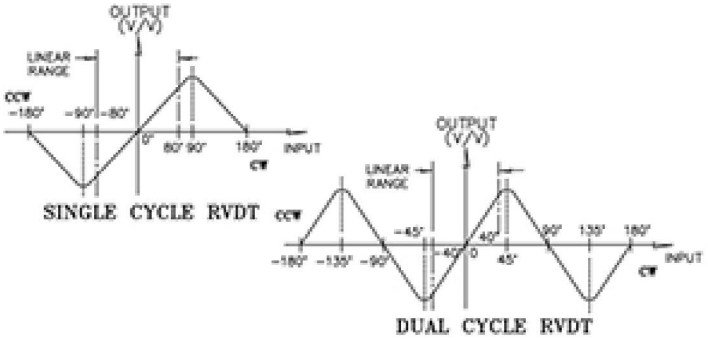
DIMENSIONS

Dimensions in mm [Inch]

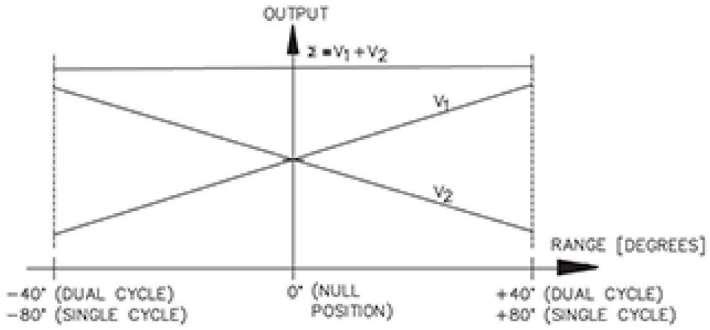
Typical Output (Calibrated Range)



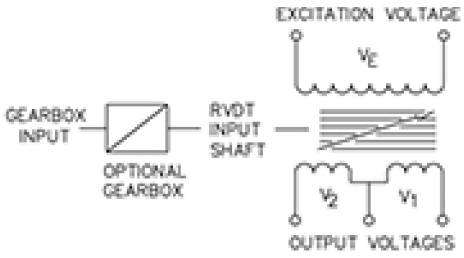
Typical Output (Full 360°)



Nominal Individual Output



Electrical Schematic



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