

**SPECIFICATIONS** -- *Two-Pi hallpot®* --- 360 degree linear signal angle sensor.

Made by ----- *Elweco, Inc.*

**DESCRIPTION:**

Two-Pi hallpot® angle sensor enables linear measurement of angular rotation of its shaft. Output signals are linear over an angular range of 0 to 360 degrees.

Two signals are simultaneously present with opposite slopes so that the user can chose the slope of the linear response for whichever slope fits his needs for either direction of rotation.

Unregulated power supply voltage is acceptable with stable calibrated output signals that are not affected by power supply variations.

The NON-CONTACTING HALL EFFECT is used to generate the signals such that there is no wear in the sensor. Ball bearings are used on the rotor for long life. Anodized journal bearings are used for lower cost applications.



Model 100SB-Pi-5V-2X2400

Model 75TJ-Pi-5V-2X2400

Model 75SB-Pi-5V-2X2400

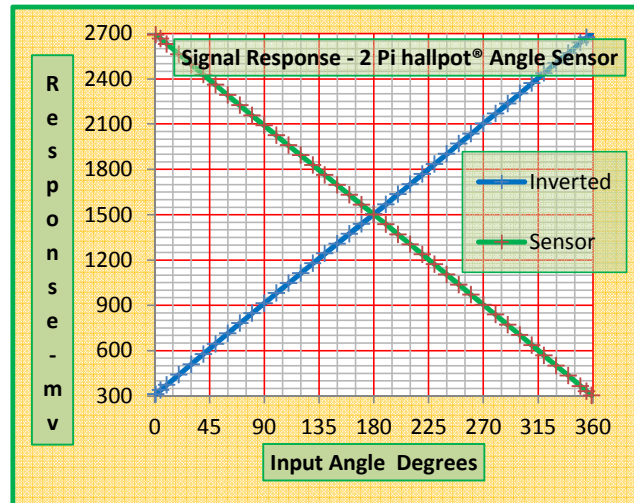
**APPLICATIONS**

Measure and control

- antenna direction
- wind direction
- fluid flow direction
- camera angle
- hydrofoil and airfoil angle
- robotic joint angle
- dancer arm angle

These are typical applications. Your application may be different.

Elweco, Inc can modify design and parameters to fit into other applications.



**SPECIFICATIONS**

- Power supply --- +4.5 to +5.5 Vdc at 12 ma.
- Input angle of rotation --- 0 to 360 degrees, continuous.
- Output signal range --- 300 to 2700 mv volts and +2700 to +300 mv simultaneous signals for either direction of rotation.
- Rotation rate --- 0 to 5,000 RPM

**ENVIRONMENT:**

- Temperature ---- -20 to +85 Deg C
- Relative Humidity ----- 0 to +95 %

**VARIATIONS** --- TO FIT YOUR NEEDS

Two-Pi hallpot® angle sensors may be calibrated for smaller rotation angles with linear response. Size and shape may be altered as you may need. Consult Elweco, Inc for your special needs.

**CONTACT**

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This page contains information to help mounting and connecting the Two-Pi hallpot® Linear Angle Sensors.

This includes:

- 1 --- Power supply and signal connections.
- 2 --- Internal electronics and explanation of signal outputs
- 3 --- Mechanical configurations --- made to fit.

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Dimensions are shown in the following drawings to enable designing into your system'

### POWER SUPPLY and signal CONNECTIONS

It is important that the power supply be connected properly or damage to the device can result.

Lead colors are as follows:

- BLACK ---- Common for power and signal.
- RED ---- +4.5 to + 5.5 volt power.
- GREEN ---- Signal directly from the sensor.
- BLUE ---- Inverted unity-gain signal.

Be careful to not short the signal leads to either common nor to the positive power source

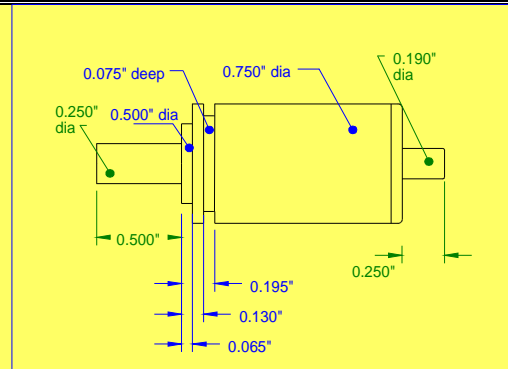


Figure 1 ----- Model 75SB-2Pi-5v-2X2400

### INTERNAL Electronics and explanation of signal outputs of the Two-Pi hallpot® Angle Sensor.

The internal sensor is energized by an internal regulator which operates from a regulated or unregulated voltage source of between +4.5 to +5.5 Vdc. The primary voltage of the signal from the sensor is between +300 to +2700 millivolts from 0 to 360 degrees CCW and has a negative slope.

A unity gain inverting amplifier provides a signal with a positive slope. Note that the sum of the two signals equals 3000 mv with very slight error.

With both a positive and a negative slope for either direction of rotation, the user can choose whichever slope best suited for the application.

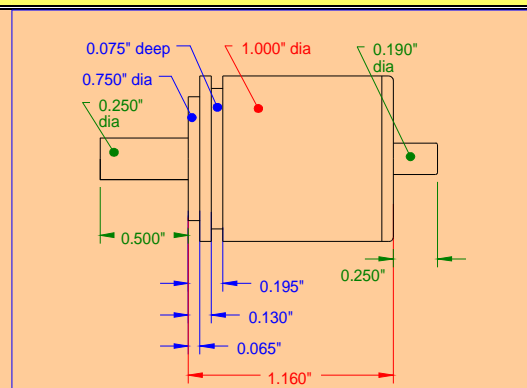


Figure 2 -----Model 100SB-2Pi-5V-2X2400

### Mechanical configuration ----- made to fit

Standard common dimensions and shape are used for mounting so that no special hardware is needed to fit these devices into most systems, either new systems or existing designs. These consist of common servo-mounting with two common sizes and one device with a threaded journal to fit where ordinary potentiometers normally fit.

Ball bearings are used in the servo-mounting designs and anodized journal bearings are used in the threaded designs.

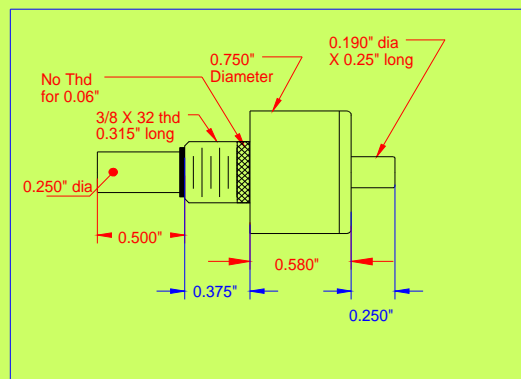


Figure 3 ----- Model 75TJ-2Pi-5V-2X2400