

## TH-750-A SERIES HERMETICALLY SEALED AC LVDT LINEAR POSITION SENSOR

Hermetically Sealed AC LVDT Sensor

### FEATURES

- Free Core design
- AC LVDT
- Stroke lengths from  $\pm 0.05$  to  $\pm 10$  inches
- Non-Linearity better than  $\pm 0.25\%$  of FS
- Stainless steel housing rated to IP68

### APPLICATIONS

- Laboratory R&D Materials Testing
- Valve Position Sensing
- Factory Automation



### OVERVIEW

The HGSi TH-750-A series AC Linear Variable Differential Transformer (LVDT) Position Sensors are used to monitor and track the linear motion or position of a target. These ruggedized sensors are ideal for use in industrial and laboratory applications including automotive R&D, motorsports, industrial, motion control, medical, military and aerospace.

These hermetically sealed sensors are constructed entirely of stainless steel and are resistant to dust, water, and temperature. The coil windings are sealed using an epoxy potting compound providing excellent protection against shock and vibration.

The TH-750-A series will operate with most any conventional differential input AC LVDT signal conditioner, but operation with ratiometric signal conditioning is not recommended. HGSi offers a full line of compatible AC LVDT signal conditioners. Please contact us for a recommendation.

### SPECIFICATIONS

<b>Input Voltage:</b>	3 Vrms (nominal)
<b>Input Frequency:</b>	400 Hz to 10 kHz
<b>Linearity Error:</b>	$\leq \pm 0.15\%$ of FSO typical, $\pm 0.25\%$ maximum
<b>Null Voltage:</b>	0.5% of FS
<b>Repeatability:</b>	0.01% of FS
<b>Hysteresis:</b>	0.01% of FS
<b>Operating Temperature:</b>	-54 to +135°C (-65 to +275°F) - Standard Temperature Version -54 to +204°C (-65 to +400°F) - High Temperature Version
<b>Thermal Coefficient:</b>	< -0.02%/°C of FS (< -0.01%/°F of FS)
<b>Humidity:</b>	90% RH
<b>Housing:</b>	Stainless steel
<b>Mating Connector:</b>	Amphenol PT06A-10-6S(SR) or equivalent
<b>Life Expectancy:</b>	> 100 million cycles
<b>Shock Rating:</b>	1000g, 11 mS
<b>Vibration Rating:</b>	20 g to 2 kHz
<b>IP Rating:</b>	IEC IP68
<b>Country of Manufacture:</b>	Made in the USA

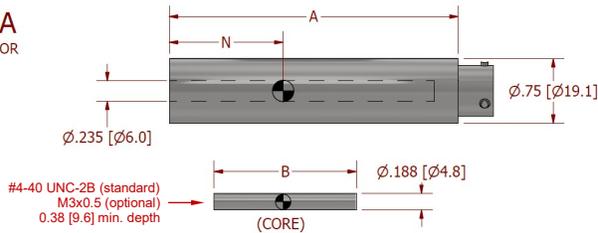


# LINEAR POSITION SENSOR

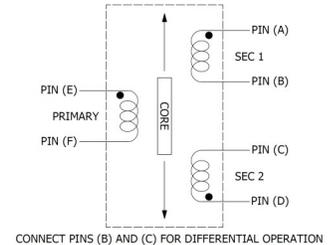
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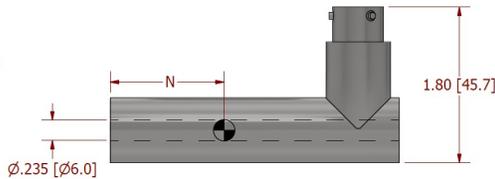
**TH-750-A**  
AXIAL CONNECTOR



Dimensions in inches [mm]



**THR-750-A**  
RIGHT ANGLE CONNECTOR



### SPECIFICATIONS

	TH-750-A-050	TH-750-A-125	TH-750-A-250	TH-750-A-500	TH-750-A-1000	TH-750-A-2000
	THR-750-A-050	THR-750-A-125	THR-750-A-250	THR-750-A-500	THR-750-A-1000	THR-750-A-2000
Measuring Range (in) [mm]	± 0.050 [± 1.2]	± 0.125 [± 3.2]	± 0.250 [± 6.3]	± 0.500 [± 12.5]	± 1.0 [± 25]	± 2.0 [± 50]
Sensitivity (mV/V/0.001 in) [mm]	6.1 [240]	3.9 [154]	2.4 [96]	0.63 [25]	0.61 [24]	0.37 [15]
Dimension A (in) [mm]	2.01 [51.1]	2.64 [67.1]	3.35 [85.1]	5.92 [150.4]	7.38 [187.5]	10.91 [277.1]
Dimension B (in) [mm]	0.80 [20.3]	1.25 [31.7]	1.65 [41.9]	3.45 [87.6]	3.45 [87.6]	5.30 [134.6]
Dimension N {null} (in) [mm]	0.63 [16]	0.94 [23.9]	1.32 [33.5]	2.57 [65.3]	3.32 [84.3]	5.07 [128.8]

	TH-750-A-3000	TH-750-A-4000	TH-750-A-5000	TH-750-A-7500	TH-750-A-10000
	THR-750-A-3000	THR-750-A-4000	THR-750-A-5000	THR-750-A-7500	THR-750-A-10000
Measuring Range (in) [mm]	± 3.0 [± 75]	± 4.0 [± 100]	± 5.0 [± 125]	± 7.5 [± 190]	± 10.0 [± 250]
Sensitivity (mV/V/0.001 in) [mm]	0.25 [9.8]	0.17 [6.7]	0.12 [4.7]	0.11 [4.3]	0.07 [2.8]
Dimension A (in) [mm]	13.65 [346.1]	16.17 [411]	18.65 [473.7]	23.85 [606]	31.66 [804]
Dimension B (in) [mm]	6.20 [157.5]	6.20 [157.5]	6.20 [157.5]	7.00 [177.8]	9.50 [241.3]
Dimension N {null} (in) [mm]	6.29 [159.8]	7.65 [194.3]	8.94 [227.1]	11.52 [292.6]	15.42 [391.7]

### ORDERING INFORMATION

Model	Measuring Range	Options
TH □ -750-A	- □ □ □	- □
(blank) Axial R Radial	<b>050</b> ± 0.050 inches <b>125</b> ± 0.125 inches <b>250</b> ± 0.250 inches <b>500</b> ± 0.500 inches <b>1000</b> ± 1.0 inches <b>2000</b> ± 2.0 inches <b>3000</b> ± 3.0 inches <b>4000</b> ± 4.0 inches <b>5000</b> ± 5.0 inches <b>7500</b> ± 7.5 inches <b>10000</b> ± 10.0 inches	<b>H</b> High Temperature (400°F) <b>M</b> Metric Core Threads (M3x0.5) <b>R</b> Mild Radiation Resistance (30 MRads) <b>T</b> Teflon™ Boreliner

### WIRING PIN OUT

	PT02 Connector
Secondary 1 V+	A
Secondary 1 V-	B
Secondary 2 V-	C
Secondary 2 V+	D
Primary V+	E
Primary V-	F

### ORDERING EXAMPLE

TH-750-A-500: AC LVDT, ± 0.500 inch Measuring Range

