

# TH-750-I Series Hermetically Sealed DC LVDT Linear Position Sensor

## Features

- Free Core design
  - 4 to 20 mA output, 2-wire loop powered
  - Stroke lengths from 0.100 to 20 inches
  - Non-Linearity better than  $\pm 0.25\%$  of FS
- Stainless steel housing sealed to IP68



## Applications

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

## Overview

The HGS I TH-750-I series DC 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.

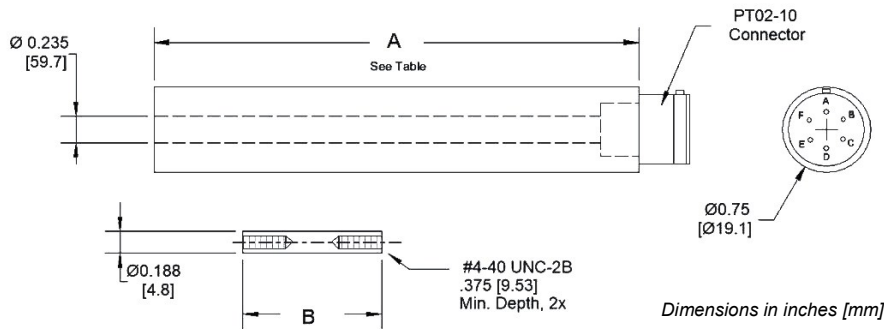
These hermetically sealed sensors are constructed entirely of stainless steel and are resistant to dust, water, and temperature. The coil windings are sealed using an epoxy potting compound providing excellent protection against shock and vibration.

The amplifier electronics are contained within the housing, no need for an external signal conditioner. The 4 to 20 mA loop powered output is precalibrated at the factory.

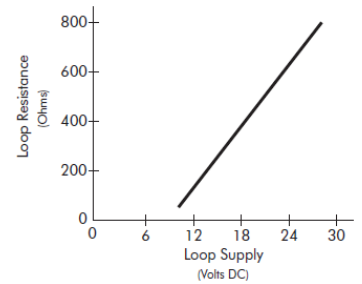
## Specifications

<b>Full Scale Output:</b>	4 to 20 mA, 2-wire loop powered
<b>Input Power:</b>	24 VDC (from 11 to 28 VDC)
<b>Linearity Error:</b>	$\leq \pm 0.15\%$ of FSO typical, $\pm 0.25\%$ maximum
<b>Resolution:</b>	16 bit
<b>Repeatability:</b>	0.01% of FS
<b>Hysteresis:</b>	0.01% of FS
<b>Bandwidth:</b>	125 Hz update rate (analog signal output)
<b>Operating Temperature:</b>	-20 to +85°C (0 to +185°F)
<b>Thermal Coefficient:</b>	$< -0.025\%/^{\circ}\text{C}$ of FS ( $< -0.014\%/^{\circ}\text{F}$ 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

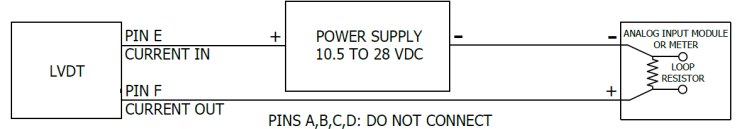
# TH-750-I Series Hermetically Sealed DC LVDT Linear Position Sensor



Loop Resistance vs. Minimum Loop Supply Voltage



Minimum Loop Resistance 100Ω



## Specifications

	TH-750-I-100	TH-750-I-250	TH-750-I-500	TH-750-I-1000	TH-750-I-2000	TH-750-I-4000
Measuring Range (in) [mm]	0.100 [2.5]	0.250 [6.3]	0.500 [12.7]	1.0 [25.4]	2.0 [50.8]	4.0 [102]
Scale Factor (mA/in) [mA/mm]	160 [6.4]	64 [2.6]	32 [1.28]	16 [0.64]	8 [0.32]	4 [0.16]
Dimension A (in) [mm]	2.86 [72.5]	3.48 [88.3]	4.24 [107.7]	6.74 [171.2]	8.24 [209.3]	11.21 [284.7]
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]

	TH-750-I-6000	TH-750-I-10000	TH-750-I-20000
Measuring Range (in) [mm]	6.0 [152]	10.0 [254]	20.0 [508]
Scale Factor (V/in) [V/mm]	2.67 [0.1]	1.6 [0.06]	0.8 [0.03]
Dimension A (in) [mm]	14.49 [368.0]	19.49 [495.0]	32.38 [822.5]
Dimension B (in) [mm]	6.20 [157.5]	6.20 [157.5]	9.50 [241]

## Ordering Information

Model	Measuring Range	Options
TH-750-I	- □ □ □	- □
	<b>100</b> 0 to 0.100 inches <b>250</b> 0 to 0.250 inches <b>500</b> 0 to 0.500 inches <b>1000</b> 0 to 1.0 inches <b>2000</b> 0 to 2.0 inches <b>4000</b> 0 to 4.0 inches <b>6000</b> 0 to 6.0 inches <b>10000</b> 0 to 10.0 inches <b>20000</b> 0 to 20.0 inches	<b>M</b> Metric Core Threads (M3x0.5) <b>T</b> Teflon™ Boreliner

## Wiring Pin Out

	PT02 Connector
Loop Positive	E
Loop Negative	F

## Ordering Example

TH-750-I-500: 4 to 20 mA Output, 0 to 0.500 inch Measuring Range

