

T-750-D/E/I SERIES DC LVDT LINEAR POSITION SENSOR

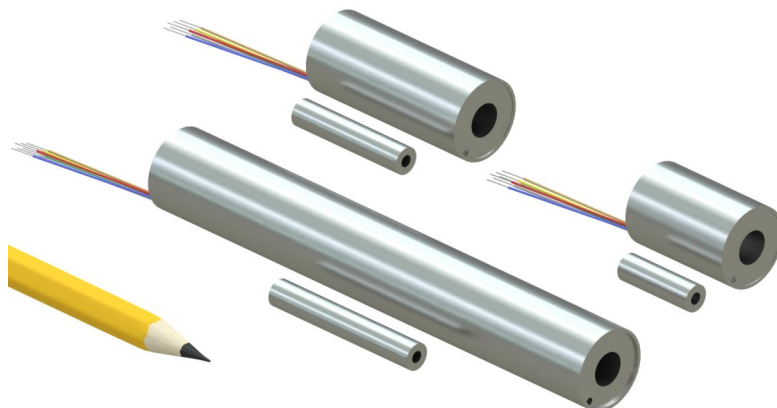
General Purpose Free Core DC LVDTs

FEATURES

- Free Core design
- Stroke lengths from ± 0.05 to ± 10 inches
- Non-Linearity better than $\pm 0.25\%$ of FS
- Stainless steel housing sealed to IP61

APPLICATIONS

- Laboratory R&D Materials Testing
- Industrial Gauging Test Stands



OVERVIEW

The HGS I T-750-D/E/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 swaged-end sensors are constructed entirely of stainless steel and are resistant to dust 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 analog output is precalibrated at the factory.

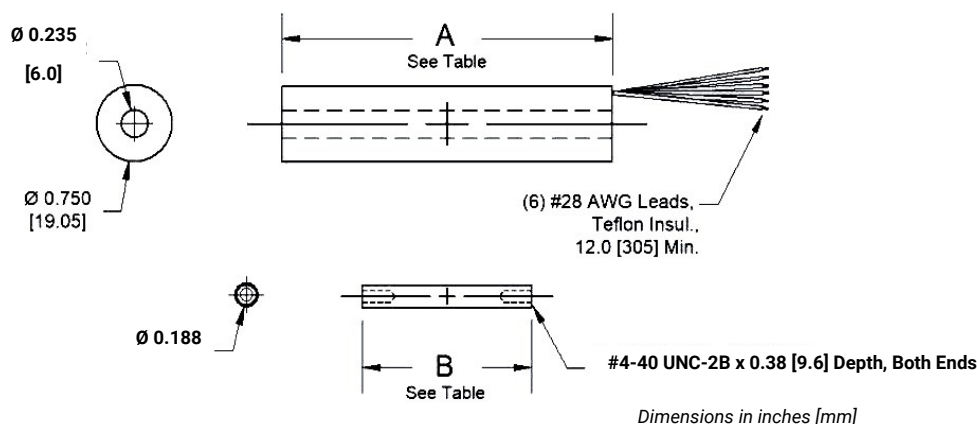
SPECIFICATIONS

	T-750-D	T-750-E	T-750-I
Full Scale Output	± 10 VDC	0 to 10 VDC	4 to 20 mA. 2-wire loop
Input Power	± 15 VDC, ± 25 mA	24 VDC (from 15 to 26 VDC), 25 mA	24 VDC (from 11 to 28 VDC)
Linearity Error	$\leq \pm 0.15\%$ of FSO typical, $\pm 0.25\%$ maximum		
Resolution	16 bit		
Repeatability	0.01% of FS		
Hysteresis	0.01% of FS		
Bandwidth	125 Hz update rate (analog signal output)		
Operating Temperature	-20 to $+85^{\circ}\text{C}$ (0 to $+185^{\circ}\text{F}$)		
Thermal Coefficient	$< -0.025\%$ of FS of $^{\circ}\text{C}$ ($< -0.014\%$ of FS of $^{\circ}\text{F}$)		
Humidity	90% RH		
Housing	Stainless steel		
Lead Wires	28 AWG Teflon™ insulated, 12" length (305 mm)		
Life Expectancy	> 100 million cycles		
Shock Rating	1000g, 11 ms		
Vibration Rating	20 g to 2 kHz		
IP Rating	IEC IP68		
Country of Manufacture	Made in the USA		



T-750-D SERIES DC LVDT LINEAR POSITION SENSOR

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SPECIFICATIONS

	T-750-D-050	T-750-D-125	T-750-D-250	T-750-D-500	T-750-D-1000	T-750-D-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]
Scale Factor (V/in) [V/mm]	200 [8.0]	80 [3.3]	40 [1.6]	20 [0.8]	10 [0.4]	5 [0.2]
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]

	T-750-D-3000	T-750-D-5000	T-750-D-10000
Measuring Range (in) [mm]	± 3.0 [± 75]	± 5.0 [± 125]	± 10.0 [± 250]
Scale Factor (V/in) [V/mm]	3.3 [0.13]	2.0 [0.08]	1.0 [0.04]
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 [241.3]

ORDERING INFORMATION

Model	Measuring Range	Options
T-750-D	- □ □ □	- □
	050 ± 0.050 inches 125 ± 0.125 inches 250 ± 0.250 inches 500 ± 0.500 inches 1000 ± 1.0 inches 2000 ± 2.0 inches 3000 ± 3.0 inches 5000 ± 5.0 inches 10000 ± 10.0 inches	L Improved Linearity (<+/- 0.10%) M Metric Core Threads (M3x0.5) T Teflon™ Boreliner

WIRING PIN OUT

	Color
±10 VDC Output	White
Output Common	Green
Power Common	Green
+15 VDC Power In	Red
-15 VDC Power In	Black

ORDERING EXAMPLE

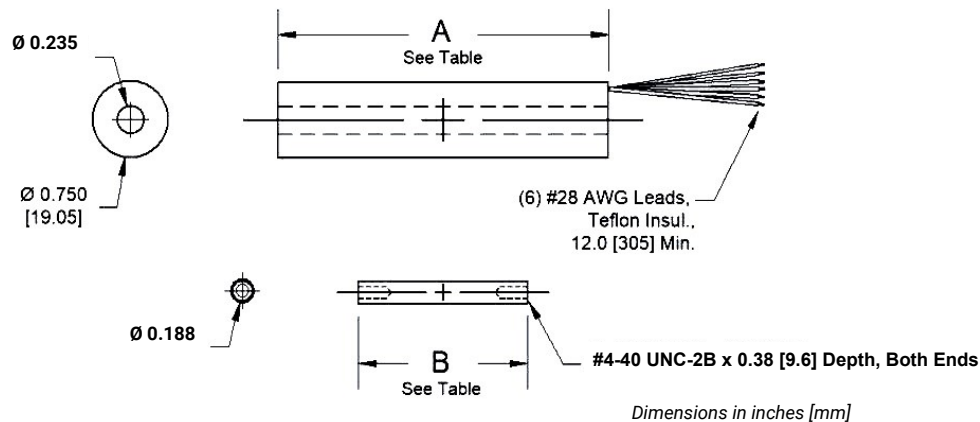
T-750-D-500: ± 10 VDC Output, ± 0.500 inch Measuring Range



LINEAR POSITION SENSOR

T-750-E SERIES DC LVDT LINEAR POSITION SENSOR

General Purpose Free Core DC LVDTs



SPECIFICATIONS

	T-750-E-100	T-750-E-250	T-750-E-500	T-750-E-1000	T-750-E-2000	T-750-E-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 (V/in) [V/mm]	100 [4.0]	40 [1.6]	20 [0.8]	10 [0.4]	5.0 [0.2]	2.5 [0.1]
Dimension A (in) [mm]	2.86 [72.5]	3.48 [88.3]	4.24 [107]	6.74 [171]	8.24 [209]	11.21 [284]
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]

	T-750-E-6000	T-750-E-10000	T-750-E-20000
Measuring Range (in) [mm]	6.0 [152]	10.0 [254]	20.0 [508]
Scale Factor (V/in) [V/mm]	1.6 [0.06]	1.0 [0.04]	0.5 [0.02]
Dimension A (in) [mm]	14.49 [368]	19.49 [495]	32.38 [822]
Dimension B (in) [mm]	6.20 [157]	6.20 [157]	9.50 [241]

ORDERING INFORMATION

Model	Measuring Range	Options
T-750-E	- □□□	- □
	100 0 to 0.100 inches	L Improved Linearity (<+/- 0.10%)
	250 0 to 0.250 inches	M Metric Core Threads (M3x0.5)
	500 0 to 0.500 inches	T Teflon™ Boreliner
	1000 0 to 1.0 inches	
	2000 0 to 2.0 inches	
	4000 0 to 4.0 inches	
	6000 0 to 6.0 inches	
	10000 0 to 10.0 inches	
	20000 0 to 20.0 inches	

WIRING PIN OUT

	Color
0 to 10 VDC Output	Blue
Output Common	Black
Power Common	Black
+ VDC Power In	Red

ORDERING EXAMPLE

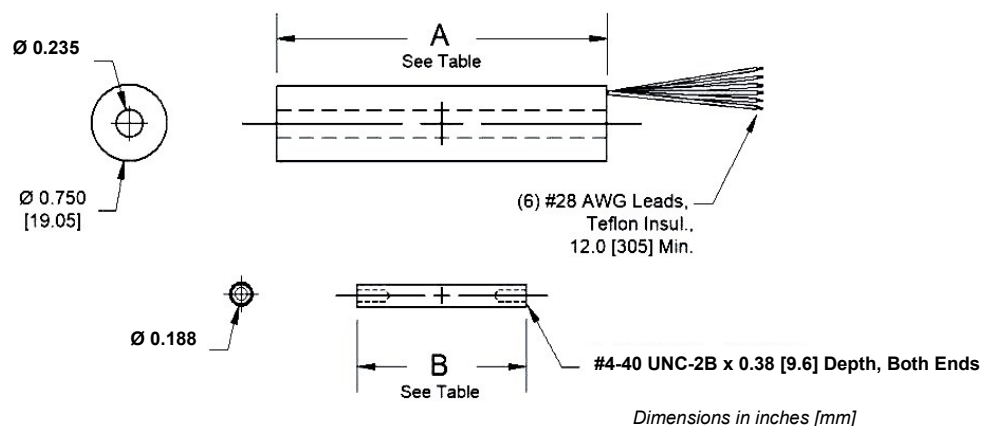
T-750-E-1000: 0 to 10 VDC Output, 0 to 1.0 inch Measuring Range



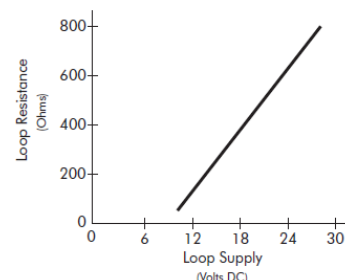
LINEAR POSITION SENSOR

T-750-I SERIES DC LVDT LINEAR POSITION SENSOR

General Purpose Free Core DC LVDTs



Loop Resistance vs. Minimum Loop Supply Voltage



Minimum Loop Resistance 100Ω

SPECIFICATIONS

	T-750-I-100	T-750-I-250	T-750-I-500	T-750-I-1000	T-750-I-2000	T-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]	6.74 [171]	8.24 [209]	11.21 [284]
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]

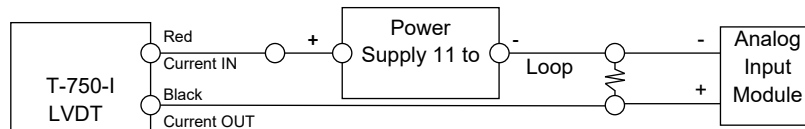
	T-750-I-6000	T-750-I-10000	T-750-I-20000
Measuring Range (in) [mm]	6.0 [152]	10.0 [254]	20.0 [508]
Scale Factor (V/in) [V/mm]	2.67 [0.1]	1.6 [0.06]	0.8 [0.03]
Dimension A (in) [mm]	14.49 [368]	19.49 [495]	32.38 [822]
Dimension B (in) [mm]	6.20 [157]	6.20 [157]	9.50 [241]

ORDERING INFORMATION

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

WIRING OUT

	Color
Loop Positive	Red
Loop Negative	Black



ORDERING EXAMPLE

T-750-I-1000: 4 to 20 mA, Output, 0 to 1.0 inch Measuring Range

