

# HSE 750 Series

## Hermetically Sealed DC-LVDT Position Sensors



### Description

Macro Sensors' HSE 750 Series of 3/4 inch (19 mm) diameter DC-operated LVDTs is designed for a wide range of position measurement applications. These are rugged hermetically sealed sensors, constructed entirely of stainless steel, and intended for general industrial use. The coil windings are sealed against hostile environments to IEC standard IP-68 and electrical termination is through a sealed axial connector. The mating connector plug is supplied with the unit.

HSE 750 Series sensors use built-in electronics to provide the desirable features of an AC-LVDT, such as frictionless operation and dynamic response, with the added convenience and simplicity of DC input and precalibrated DC output. They are designed to operate in conjunction with PLCs, digital indicators, A/D converters, computer-based data processors and QC data collection systems.

### Features

- Ranges of 0.100 inch to 20.00 inches
- 24 V DC input, precalibrated 0 to 10 V DC output
- Non-linearity less than or equal to  $\pm 0.25\%$  of FSO (less than or equal to  $\pm 0.10\%$  optional)
- In-line connector, mating plug included
- Environmentally sealed to IEC IP-68

### Applications

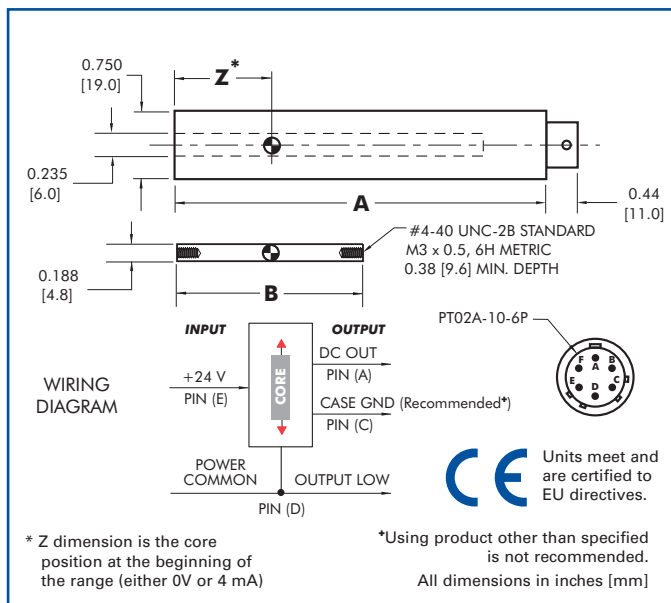
- Machine tool positioners
- Hydraulic cylinder position
- Valve position sensing
- Automatic assembly equipment
- Corrosive environments

Available in ranges of 0.100 inch (2.5 mm) to 20.00 inches (500 mm), the HSE 750 Series sensors feature the high resolution, excellent repeatability, and low hysteresis associated with LVDT technology. Their exceptional reliability is a result of manufacturing processes and assembly techniques developed and optimized by Macro Sensors over many years of manufacturing LVDT sensors. The standard maximum linearity error for any of these sensors is  $\pm 0.25\%$  of full scale output using a statistically best-fit straight line derived by the least squares method. A linearity error of less than or equal to  $\pm 0.10\%$  of full scale output is available as an option.

Macro Sensors offers several standard options that permit a user to customize HSE 750 LVDTs, including Teflon® bore liners and metric threaded cores. In addition, Macro Sensors can provide mounting accessories, core extension rods, and DC power supplies.

### General Specifications

- Input Power:** 24 V DC (nominal)  
12-26 V DC  $\approx$   
25 mA (max.)
- Full Scale Output:** 0 to 10 V DC, 5 mA (max.)
- Output Noise & Ripple:**  $\leq 5$  mV<sub>rms</sub>
- Frequency Response (-3dB):** 250 Hz (nominal)
- Linearity Error:**  $\leq \pm 0.25\%$  of FSO  
( $\leq \pm 0.10\%$  of FSO optional)
- Repeatability Error:**  $\leq 0.01\%$  of FSO
- Hysteresis Error:**  $\leq 0.01\%$  of FSO
- Operating Temperature:** -20°C to +85°C
- Thermal Coefficient of Scale Factor:** -0.027%/°C (nominal)
- Thermal Coefficient of Zero Offset:**  $\pm 0.01\%$ /°C (max.)
- Vibration Tolerance:** 20 g to 2 kHz
- Shock Survival:** 100 g, 11 ms



### Specifications

Model ▶	HSE 750 -100	HSE 750 -250	HSE 750 -500	HSE 750 -1000	HSE 750 -2000	HSE 750 -4000	HSE 750 -6000	HSE 750 -10000	HSE 750 -15000	HSE 750 -20000
Nominal Range (inches)	0.100	0.250	0.500	1.00	2.00	4.00	6.00	10.00	15.00	20.00
Nominal Range (mm)	2.5	6.3	12.7	25.4	50.8	101.6	152.4	254.0	381.0	508.0
Scale Factor (V/inch)	100	40	20	10	5.0	2.5	1.65	1.0	0.67	0.5
Scale Factor (V/mm)	4.0	1.6	0.8	0.4	0.2	0.1	0.06	0.04	0.03	0.02
Dimension "A" (inches)	2.86	3.48	4.24	6.74	8.24	11.21	14.49	19.49	25.00	32.38
Dimension "A" (mm)	72.5	88.3	107.7	171.2	209.3	284.7	368.0	495.0	635.0	822.5
Dimension "B" (inches)	0.80	1.25	1.65	3.45	3.45	5.30	6.20	6.20	7.00	9.50
Dimension "B" (mm)	20.3	31.7	41.9	87.6	87.6	134.6	157.5	157.5	177.8	241.3
Dimension "Z" (inches)	0.58	1.00	1.10	2.07	2.33	3.07	3.45	3.95	4.02	5.42
Dimension "Z" (mm)	14.7	25.4	27.9	52.6	59.2	78.0	87.6	100.3	102.1	137.7
Weight - Body (ounces)	1.9	2.5	3.1	4.1	4.9	8.3	10.3	12.1	16.3	20.4
Weight - Body (g)	54	68	80	114	140	236	292	342	462	579
Weight - Core (ounces)	0.08	0.12	0.18	0.40	0.40	0.65	0.80	0.80	0.90	1.20
Weight - Core (g)	2.4	3.7	4.8	11.6	11.6	18.0	22.0	22.0	25.5	34.0

### Ordering Information

- For standard HSE 750, order by model number with range.
- For metric threaded core option, add -006 after model number with range.
- For Teflon® bore liner option, add -010 after model number with range.
- For  $\pm 0.10\%$  of FSO linearity error option, add -200 after model number with range.
- For combinations of options, add option numbers together (eg. -216, -210, -206, -200, -016, -010, -006).