

SE 750 Series

General Purpose DC-LVDT Position Sensors



Description

Macro Sensors' SE 750 Series of 3/4 inch (19 mm) DC-operated LVDTs are designed for a wide range of position measurement applications. They 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.

The SE 750 Series offers nine standard ranges from 0.100 inch (2.5 mm) to 20.00 inches (500 mm) that will accommodate many application requirements. The maximum linearity error for an SE 750 Series sensor is $\pm 0.25\%$ of full range 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.

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)
- Industry-standard 3/4 inch (19 mm) diameter
- Through-bore design
- Sealed to IEC IP-62

Applications

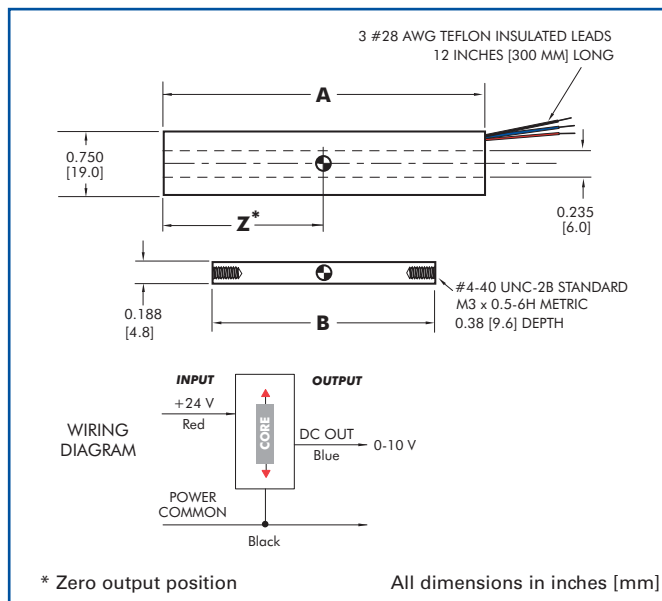
- Machine tool positioners
- Materials testing extensometers
- Hydraulic cylinder position
- Valve position sensing
- Automatic assembly equipment

SE 750 Series sensors provide highly reliable, contactless operation with 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. Their stainless steel housings act as magnetic shields to reduce the effects of external AC magnetic fields, and their sealing meets IEC standard IP-62.

Other options available for the SE 750 LVDTs include Teflon® bore liners and metric threaded cores. In addition, Macro Sensors can provide a range of mounting accessories, core extension rods and DC power supplies.

General Specifications

Input Power:	24 V DC (nominal) 15-24 V DC $\pm 10\%$, 30 mA (nominal)
Full Scale Output:	0 to 10 V DC
Output Noise & Ripple:	< 5 mV _{rms}
Frequency Response (-3dB):	250 Hz (nominal)
Linearity Error:	$\leq \pm 0.25\%$ of FSO ($\leq \pm 0.10\%$ of FSO optional)
Repeatability Error:	< 0.01% of FSO
Hysteresis Error:	< 0.01% of FSO
Operating Temperature:	0°F to +160°F (-20°C to +70°C)
Thermal Coefficient of Scale Factor:	-0.015%/°F (nominal) (-0.027%/°C nominal)
Vibration Tolerance:	20 g to 2 kHz
Shock Survival:	100 g, 11 ms



Specifications

Model ▶	SE 750 -100	SE 750 -250	SE 750 -500	SE 750 -1000	SE 750 -2000	SE 750 -4000	SE 750 -6000	SE 750 -10000	SE 750 -20000
Parameter ▼									
Nominal Range (inches)	0.100	0.250	0.500	1.00	2.00	4.00	6.00	10.00	20.00
Nominal Range (mm)	2.5	6.3	12.7	25.4	50.8	101.6	152.4	254	508
Scale Factor (V/inch)	100	40	20	10	5.0	2.5	1.65	1.0	0.5
Scale Factor (V/mm)	4.0	1.6	0.8	0.4	0.2	0.1	0.06	0.04	0.02
Dimension "A" (inches)	2.86	3.48	4.24	6.74	8.24	11.21	14.49	19.49	32.38
Dimension "A" (mm)	72.5	88.3	107.7	171.2	209.3	284.7	368.0	495.0	822.5
Dimension "B" (inches)	0.80	1.25	1.65	3.45	3.45	5.30	6.20	6.20	9.50
Dimension "B" (mm)	20.3	31.7	41.9	87.6	87.6	134.6	157.5	157.5	241.3
Dimension "Z" (inches)	0.58	1.00	1.10	2.07	2.33	3.07	3.45	3.95	5.42
Dimension "Z" (mm)	14.7	25.4	27.9	52.6	59.2	78.0	87.6	100.3	137.7
Weight - Body (ounces)	1.8	2.3	2.8	3.7	5.5	7.5	9.5	11.0	15.7
Weight - Body (g)	50	64	80	104	158	212	268	318	445
Weight - Core (ounces)	0.08	0.12	0.18	0.40	0.40	0.65	0.80	0.80	1.20
Weight - Core (g)	2.4	3.7	4.8	11.6	11.6	18.0	22.0	22.0	34.0

Ordering Information

For standard SE 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).