

# DC 750 Series

## General Purpose DC-LVDT Position Sensors



### Features

- Industry-standard 3/4 inch (19 mm) diameter
- Ranges of  $\pm 0.050$  inch to  $\pm 10$  inches
- $\pm 15$  V DC input, precalibrated 0 to  $\pm 10$  V DC output
- Non-linearity less than  $\pm 0.25\%$  of FRO
- Through-bore design
- Sealed to IEC IP-62

### Applications

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

### Description

Macro Sensors' DC 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.

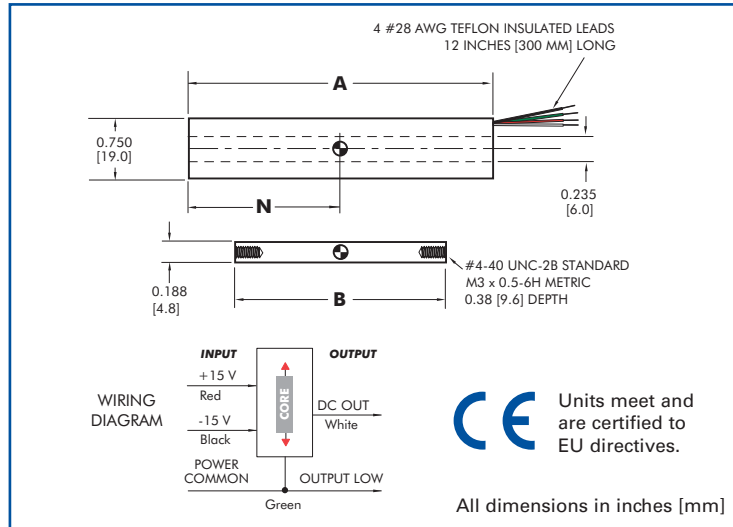
The DC 750 Series offers eleven standard ranges from  $\pm 0.050$  inch ( $\pm 1.25$  mm) to  $\pm 10$  inches ( $\pm 250$  mm) that will accommodate many application requirements. The maximum linearity error for a DC 750 Series sensor is  $\pm 0.25\%$  of full range output using a statistically best-fit straight line derived by the least squares method.

DC 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.

Standard options available for the DC 750 LVDTs include Teflon<sup>®</sup> 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:** ±15 V DC, ±25 mA
- Full Scale Output:** 0 to ±10 V DC
- Output Noise & Ripple:** <10 mV<sub>rms</sub>
- Frequency Response (-3dB):** 250 Hz (nominal)
- Linearity Error:** <±0.25% of FRO
- 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 ▶ Parameter ▼	DC 750 -050	DC 750 -125	DC 750 -250	DC 750 -500	DC 750 -1000	DC 750 -2000	DC 750 -3000	DC 750 -5000	DC 750 -10000
Nominal Range (inches)	±0.050	±0.125	±0.25	±0.50	±1.00	±2.00	±3.00	±5.00	±10.00
Nominal Range (mm)	±1.25	±3.0	±6.3	±12.5	±25	±50	±75	±125	±250
Scale Factor (V/inch)	200	80	40	20	10	5.0	3.3	2.0	1.0
Scale Factor (V/mm)	8.0	3.3	1.6	0.8	0.4	0.2	0.13	0.08	0.04
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 "N" (inches)	0.63	1.13	1.33	2.57	3.33	5.07	6.45	8.95	15.42
Dimension "N" (mm)	16.0	28.8	33.8	65.4	84.6	128.8	163.8	227.3	391.6
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 DC 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 both options, add -016 after model number with range.
- For accessories, please visit our website at [www.macrosensors.com](http://www.macrosensors.com).



*Innovators in Position Sensing*

All specifications subject to change without notice.  
© 2002 Macro Sensors 10/09/02