

GENERAL PURPOSE

DC-Operated LVDT Position Sensors
MACRO DC 750 | SE 750

Overview

Macro Sensors' DC 750 and 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 pre-calibrated 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 nine standard ranges from ±0.050 inch (±1.25 mm) to ±10 inches (±250 mm) while the SE 750 offers nine standard ranges from 0.100 inch (2.5 mm) to 20.00 inches (500 mm). The maximum linearity error for a DC 750 Series sensor is ±0.25% of full range output using a statistically best-fit straight line derived by the least squares method. The SE 750 also features a ±0.25% maximum linearity error, although a maximum linearity error of less than or equal to ±0.10% of full scale output is available as an option.

DC 750 and 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 DC 750 and 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.

Benefits

- Industry-standard 3/4 inch [19 mm] diameter
- Ranges of ±0.05" to ±10" (DC 750) or 0.100" to 20.00" (SE 750)
- ±15 V DC input, 0 to ±10 V DC output (DC 750)
- 24 V DC input, true 0-10 V DC output (SE 750)
- Non-linearity less than or equal to ±0.25% of FSO (less than or equal to ±0.10% optional on SE 750)

Applications

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

General Specifications

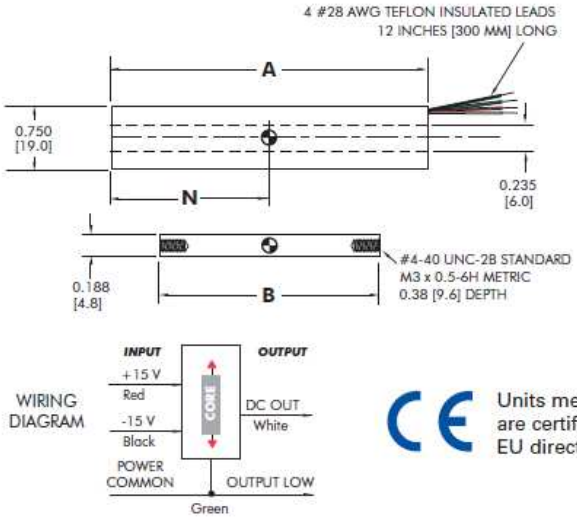
Input Power (DC 750)	±15 V DC, ±5%, ±25 mA (nominal)
Input Power (SE 750)	24 V DC (nominal) 15-24 V DC, 30 mA (nominal)
Full Scale Output (DC 750)	0 to ±10 V DC
Full Scale Output (SE 750)	0 to 10 V DC
Output Noise & Ripple (DC 750)	<10 mV rms
Output Noise & Ripple (SE 750)	<5 mV rms
Frequency Response (-3dB)	250 Hz (nominal)
Linearity Error	< ±0.25% of FSO (< ±0.10% optional, SE 750)
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

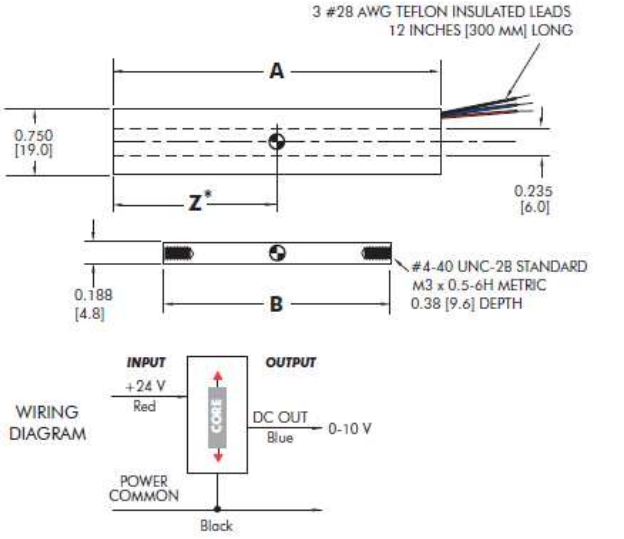
Model ▶ / Parameter ▼	DC 750 -050	DC 750 -125	DC 750 -250	DC 750 -500	DC 750 -1000	DC 750 -2000	DC 750 -3000	DC 750 -5000	DC 750 -10000
Nominal Range (inches)	±0.050	±0.125	±0.25	±0.50	±1.00	±2.00	±3.00	±5.00	±10.00
Nominal Range (mm)	±1.25	±3.0	±6.3	±12.5	±25	±50	±75	±125	±250
Scale Factor (V/inch)	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

Model ▶ / Parameter ▼	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
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

Dimensions



Units meet and are certified to EU directives.



* Zero output position

All dimensions in inches [mm]

DC 750 Series 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.

SE 750 Series 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 less than or equal to ±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).

ABOUT MACRO SENSORS

Macro Sensors, founded by Howard A. Schaevitz, has more than three hundred man-years of experience in just one thing: the design and manufacture of LVDTs. We believe that you need solutions, not simply products. When you call us, you get the benefit of our experience and our commitment.

Most products listed are in stock for immediate delivery, and we strive to offer the finest customer service in the industry: technical support from people who understand LVDTs and how to apply them to your benefit, and a commitment to excellent pricing, quality products, and deliveries that you can truly rely on. Macro Sensors also has a comprehensive network of representatives and distributors in the U.S. and around the world to provide you with local support.

We manufacture an enormous array of LVDTs, from modified standards to complete custom designs. Our customers consistently tell us it is Macro Sensors? quality and service that keeps them coming back. Let our experience go to work for you.

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