

GENERAL PURPOSE

4-20 mA LVDT Position Sensors MACRO SI 750

Overview

The SI 750 Series of 3/4 inch diameter, loop-powered 4-20 mA LVDT position transmitters is designed for a wide range of position monitoring and feedback applications. 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.

Available in standard ranges of 1 inch (25 mm) to 20 inches (500 mm), the maximum linearity error for an SI 750 Series sensor is $\pm 0.25\%$ of full range output using a statistically best-fit straight line derived by the least squares method.

SI 750 Series transmitters offer the frictionless operation, high resolution, excellent repeatability, and low hysteresis associated with LVDT technology, along with the convenience and simplicity of a pre-calibrated 4-20 mA current loop operation. The built-in electronics operate over a wide range of loop supply voltages and resistances, and are designed to operate with many PLCs, digital indicators, A/D converters, computer based data processors, and QC data collection systems.

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

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Benefits

- ♦ Standard measurement ranges of 1 to 20 inches
- ♦ 4 to 20 mA input/output
- ♦ Non-linearity of $\pm 0.25\%$ of FRO or better
- ♦ 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

General Specifications

Loop Supply Voltage	10 V to 28 V DC
Loop Resistance (Min.)	50 Ohms
Output	4-20 mA
Output Noise & Ripple	$\leq 8 \mu\text{Arms}$
Frequency Response (-3dB)	50 Hz (nominal)
Linearity Error:	$\leq \pm 0.25\%$ of FRO
Repeatability Error:	$< 0.025\%$ of FRO
Hysteresis Error:	$< 0.01\%$ of FRO
Operating Temperature:	-20°F to +185°F (-30°C to +85°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

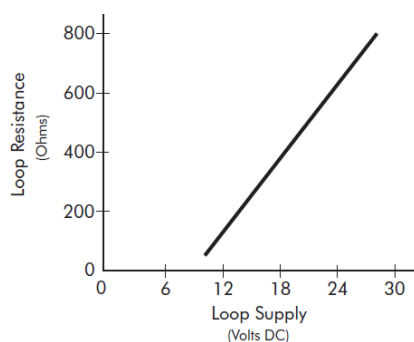
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Specifications

Model	SI 750 -1000	SI 750 -2000	SI 750 -4000	SI 750 -6000	SI 750 -10000	SI 750 -20000
Parameter						
Nominal Range (inches)	1.00	2.00	4.00	6.00	10.00	20.00
Nominal Range (mm)	25	50	100	150	250	500
Scale Factor (V/inch)	10	5.0	2.5	1.65	1.0	0.5
Scale Factor (V/mm)	0.4	0.2	0.1	0.06	0.04	0.02
Dimension "A" (inches)	6.74	8.24	11.21	14.49	19.49	32.38
Dimension "A" (mm)	171.2	209.3	284.7	368.0	495.0	822.5
Dimension "B" (inches)	3.45	3.45	5.30	6.20	6.20	9.50
Dimension "B" (mm)	87.6	87.6	134.6	157.5	157.5	241.3
Dimension "S" (inches)	2.07	2.33	3.07	3.45	3.95	5.42
Dimension "S" (mm)	52.6	59.2	78.0	87.6	100.3	137.7
Weight - Body (ounces)	3.7	5.5	7.5	9.5	11.0	15.7
Weight - Body (g)	104	158	212	268	318	445
Weight - Core (ounces)	0.40	0.40	0.65	0.80	0.80	1.20
Weight - Core (g)	11.6	11.6	18.0	22.0	22.0	34.0

Loop Resistance vs. Minimum Loop Supply Voltage



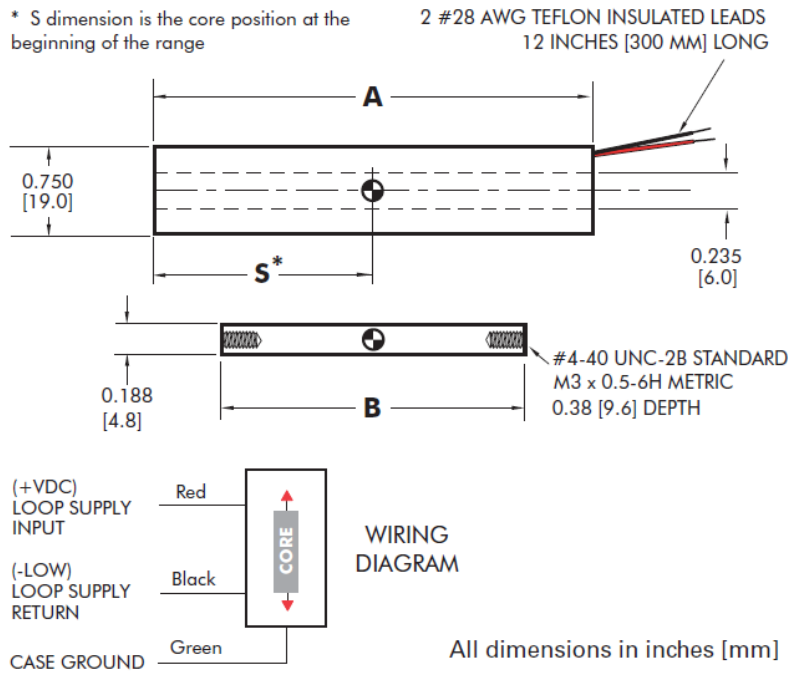
Ordering Information

- ✦ For standard SI 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 combinations of options, add option numbers together (eg. -006, -010, -016).
- ✦ For accessories, please contact factory

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Dimensions



NORTH AMERICA

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