HSIR 750 Series

Hermetically Sealed 4-20 mA LVDT Position Transmitters

Features

- Standard measurement ranges of 1 to 10 inches
- 4 to 20 mA input/output
- Non-linearity of ±0.25% of FRO or better
- Hermetically sealed for harsh environments
- Radial connector, mating plug included
- Through-bore operation

Applications

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

Description

The HSIR 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. These rugged, hermetically sealed sensors are 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 input/output connections are made through a sealed radial connector located near one end. A mating connector plug is supplied with each unit.

The radial connector offers two important benefits. First, it results in a through-bore design, which permits access to either or both ends of the LVDT's core for better mechanical support and core guidance, and easier cleanout in dusty or dirty locations. The second advantage of the radial connector is shorter installed length compared to units of the same range with axial connectors.

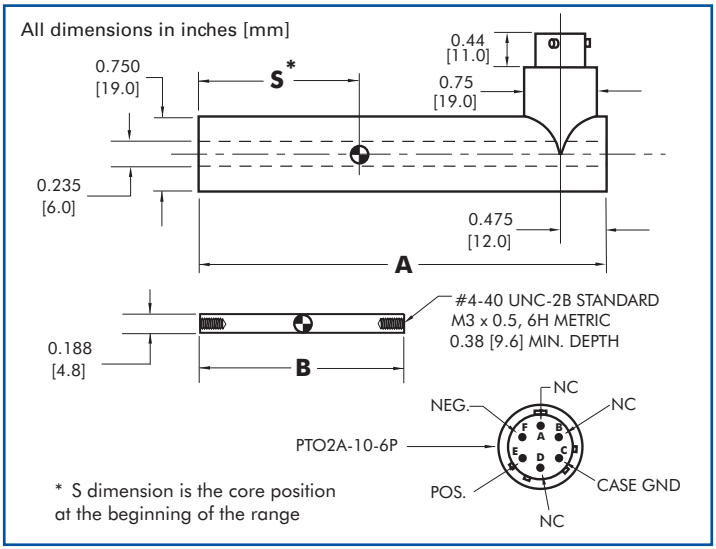
HSIR 750 Series transmitters offer the frictionless operation, high resolution, excellent repeatability, and low hysteresis associated with LVDT technology, along with the convenience and simplicity of precalibrated 4-20 mA current loop operation. Units operate as either 2-wire loop-powered or 3-wire sourcing externally powered. 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.

Available in ranges of 1 inch (25 mm) to 10 inches (250 mm), the linearity error for an HSIR 750 Series sensor is ±0.25% of full range output or better using a statistically best-fit straight line derived by the least squares method. A version with ≤±0.10% linearity error is also available.

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

General Specifications

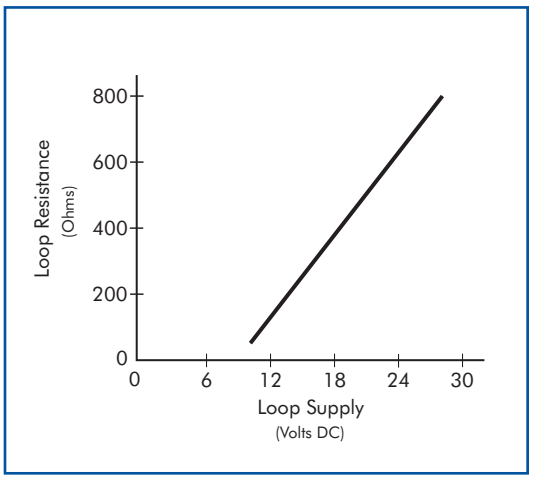
Loop Supply Voltage:	10 V to 28 V DC
Loop Resistance (Min.):	50 Ohms
Output:	4-20 mA
Output Noise & Ripple:	≤10 μArms
Frequency Response (-3dB):	50 Hz (nominal)
Linearity Error:	≤±0.25% of FRO ≤±0.10% optional
Reapeatability Error:	<0.01% of FRO
Hysteresis Error:	<0.01% of FRO
Operating Temperature:	-20°F to +175°F (-30°C to +80°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

Parameter ▼ / Model ▶	HSIR 750 -1000	HSIR 750 -2000	HSIR 750 -4000	HSIR 750 -6000	HSIR 750 -10000
Nominal Range (inches)	1.00	2.00	4.00	6.00	10.00
Nominal Range (mm)	25	50	100	150	250
Scale Factor (mA/inch)	16.0	8.0	4.0	2.67	1.6
Scale Factor (mA/mm)	0.63	0.31	0.16	0.10	0.06
Dimension "A" (inches)	7.35	8.70	12.20	14.95	19.95
Dimension "A" (mm)	186.7	221.0	309.9	379.7	506.7
Dimension "B" (inches)	3.45	3.45	5.30	6.20	6.20
Dimension "B" (mm)	87.6	87.6	134.6	157.5	157.5
Dimension "S" (inches)	2.04	2.31	2.97	3.38	3.93
Dimension "S" (mm)	51.8	58.7	75.4	85.9	99.8
Weight, Body (ounces)	4.4	5.4	7.3	9.3	13.2
Weight, Body (grams)	124	153	207	263	374
Weight, Core (ounces)	0.40	0.40	0.65	0.78	0.78
Weight, Core (grams)	11.6	11.6	18.4	22.1	22.1

Loop Resistance vs. Minimum Loop Supply Voltage



Ordering Information

For standard HSIR 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 ≤±0.10% of FSO linearity error option, add -200 after model number with range.