HSTA 750 Series

Hermetically Sealed High Temperature AC-LVDT Position Sensors

Features

- Ranges of ±0.050 inch to ±10.0 inches
- 400°F (200°C) operating temperature
- In-line connector, mating plug included
- Environmentally sealed to IEC IP-68
- Non-linearity less than ±0.25% of FRO

Applications

- Beam scraper positioning feedback
- Hydraulic cylinder position
- Steam valve postioning
- Power generation applications
- Corrosive environments

Description

Macro Sensors' HSTA 750 Series of 3/4 inch (19 mm) diameter AC-operated LVDTs is designed for a wide range of position measurement applications. These are rugged hermetically sealed sensors, constructed entirely of stainless steel, and intended for use at high temperatures (400°F). The coil windings are sealed against hostile environments to IEC standard IP-68 and electrical termination is through a sealed axial connector. The mating connector plug is supplied with the unit.

Available in ranges of ±0.050 inch (±1.25 mm) to ±10.0 inches (±250 mm), HSTA 750 Series sensors feature the high resolution, excellent repeatability, and low hysteresis associated with LVDT technology, as well as the highest sensitivity consistent with good linearity. The maximum linearity error for any of these sensors is ±0.25% of full range output using a statistically best-fit straight line derived by the least squares method.

Macro Sensors offers several standard options that permit a user to customize HSTA 750 LVDTs, including Teflon® bore liners and metric threaded cores, as well as smaller diameter and low mass cores. In addition, Macro Sensors can provide a range of mounting accessories and core extension rods. HSTA Series units can also be supplied to withstand exposure to mild radiation ($3x10^7$ Rads). On special order, the HSTA 750 Series can also be constructed for immersion in pressurized fluids.

All HSTA 750 Series LVDTs will operate properly with any conventional differential input LVDT signal conditioners, but operation with ratiometric LVDT signal conditioning is not recommended. Macro Sensors offers a full line of LVDT signal conditioners that will deliver optimum performance from any HSTA 750 Series LVDT. For more information, please visit our website at www.macrosensors.com.

General Specifications

Input Voltage: 3.0 V_{rms} (nominal)

Input Frequency: 2.5 to 3.0 kHz

Linearity Error: <±0.25% of FRO

Repeatability Error: <0.01% of FSO

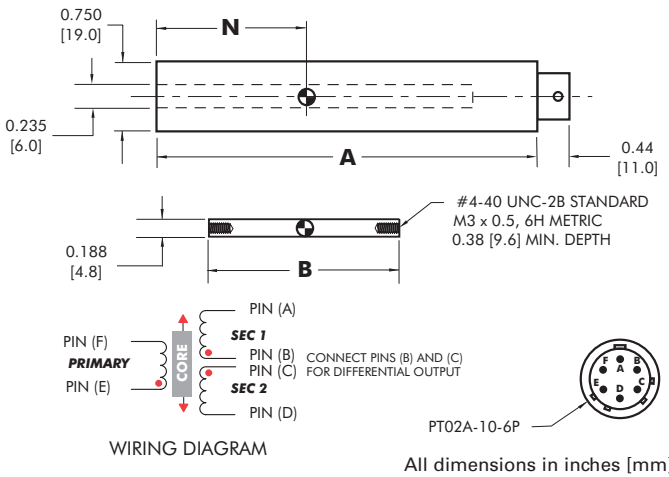
Hysteresis Error: <0.01% of FSO

Operating Temperature: -65°F to +400°F (-55°C to +200°C)

Thermal Coefficient of Sensitivity: -0.01%/°F (nominal) (-0.02%/°C nominal)

Vibration Tolerance: 20 g to 2 kHz

Shock Survival: 1000 g, 11 ms



Specifications

Model ▶ / Parameter ▼	HSTA 750 -050	HSTA 750 -125	HSTA 750 -250	HSTA 750 -500	HSTA 750 -1000	HSTA 750 -2000	HSTA 750 -3000	HSTA 750 -4000	HSTA 750 -5000	HSTA 750 -7500	HSTA 750 -10000
Nominal Range (inches)	±0.050	±0.125	±0.25	±0.50	±1.00	±2.00	±3.00	±4.00	±5.0	±7.50	±10.00
Nominal Range (mm)	±1.3	±3.0	±6.3	±12.5	±25	±50	±75	±100	±125	±190	±250
Sensitivity (mV/V/.001 in)	6.1	3.9	2.4	0.63	0.61	0.37	0.25	0.17	0.12	0.11	0.07
Sensitivity (mV/V/mm)	240	154	96	25	24	15	9.8	6.7	4.7	4.3	2.8
Primary Impedance (Ω)	325	735	1400	1200	1250	2150	2150	420	600	775	620
Dimension "A" (inches)	2.01	2.64	3.35	5.92	7.38	10.91	13.65	16.17	18.65	23.85	31.66
Dimension "A" (mm)	51.1	67.1	85.1	150.4	187.5	277.1	346.1	411	473.7	606	804
Dimension "B" (inches)	0.80	1.25	1.65	3.45	3.45	5.30	6.20	6.20	6.20	7.00	9.50
Dimension "B" (mm)	20.3	31.7	41.9	87.6	87.6	134.6	157.5	157.5	157.5	177.8	241.3
Dimension "N" (inches)	0.63	0.94	1.32	2.57	3.32	5.07	6.29	7.65	8.94	11.52	15.42
Dimension "N" (mm)	16	24	33	65	84	129	160	194	227	293	392
Weight - Body (ounces)	1.6	2.1	2.5	3.3	4.3	6.2	8.2	9.2	10.0	14.2	18.3
Weight - Body (g)	45	59	71	93	122	176	232	260	283	402	519
Weight - Core (ounces)	0.08	0.12	0.18	0.40	0.40	0.65	0.80	0.80	0.80	0.90	1.20
Weight - Core (g)	2.4	3.7	4.8	11.6	11.6	18	22	22	22	25.5	34

Ordering Information

For standard HSTA 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 (not available with -080 option).
For small diameter core option, add -020 after model number with range.
For mild radiation option, add -080 after model number with range.
For multiple options, add sum of dash numbers after model number with range.