

# HSDI 750 Series

## Loop Powered LVDT Position Transmitters



### Features

- Measurement Ranges of 1 inch to 10 inches
- Precalibrated 4-20 mA Loop-Powered I/O
- Non-linearity less than  $\pm 0.5\%$  of FRO
- Hermetically Sealed for Harsh Environments
- Mating Connector Plug Supplied

### Applications

- Control Valve Position Indication
- Waste Water Treatment Facilities
- Pumping Station Controls
- Fossil Fueled Power Plants
- Agri-chemical Dispensing

### Description

The HSDI 750 series of loop-powered 4-20mA LVDT position transmitters is offered in measuring ranges of 1 to 10 inches (25 to 250 mm) to provide reliable, contactless position monitoring and feedback of control valves and servo actuators. They are rugged and robust devices constructed entirely of TIG-welded stainless steel and hermetically sealed against hostile environments to IEC standard IP-68. The 2-wire loop input/output connections are made through a sealed axial connector, and a mating plug is supplied with each unit.

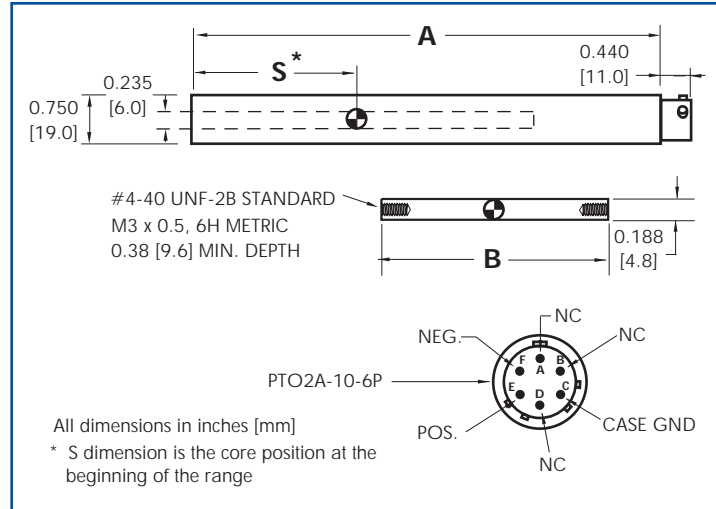
HSDI 750 series position transmitters utilize built-in electronics to offer the frictionless operation, high resolution, excellent repeatability, and low hysteresis associated with LVDT technology, along with the convenience and simplicity of a precalibrated current loop output. These transmitters have a maximum linearity error of  $\pm 0.5\%$  of full range output using a statistically best-fit straight line derived by the least squares method.

HSDI 750 series transmitters operate over a wide range of loop supply voltages and with loop resistances up to 800 Ohms, so they will work with a broad variety of servo controllers and PLCs, loop-powered analog or digital indicators, and computer-based data acquisition and processing systems.

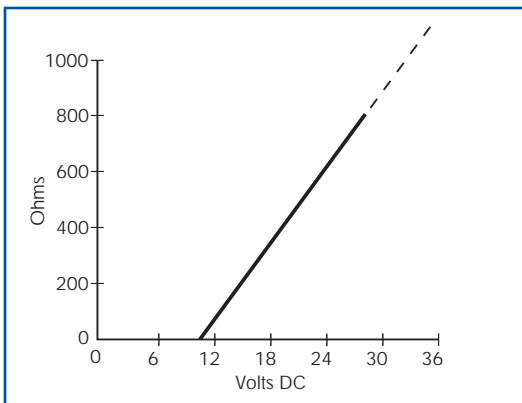
HSDI 750 position transmitters have an open bore at one end into which the LVDT's core enters. Normally, loop current will be 4 mA when the core is first inserted, increasing to 20 mA when the core is at full range within the transmitter's body. For position sensing that requires the opposite directional sense, HSDI 750 transmitters are available with reversed output slope, which gives 20 mA when the core is first inserted, decreasing to 4 mA as the core moves inward. HSDI 750 LVDTs are also available with metric-threaded cores and/or low friction Teflon™ bore liners, the ordering information for which is detailed on the reverse page.

**General Specifications**

- Loop Supply Voltage:** 10 V to 36 V DC
- Loop Resistance:** 800 Ω (max.) @ 28 V DC
- Output Current:** 4-20 mA, 2-wire loop
- Output Noise & Ripple:** < 10 µA rms
- Frequency Response (-3dB):** 50 Hz (nominal)
- Linearity Error:** < ±0.5% of FRO
- Repeatability Error:** < ±0.01% of FRO
- Hysteresis Error:** < ±0.01% of FRO
- Operating Temperature:** -20°F to +185°F (-30°C to +85°C)
- Thermal Coefficient of Sensitivity (nominal):** -0.02% of FRO/°F (-0.04% of FRO/°C)
- Vibration Tolerance:** 20 g to 2 kHz
- Shock Survival:** 100 g, 11 ms



**Loop Resistance vs. Supply Voltage**



**Specifications**

Model ▶	HSDI 750 -500	HSDI 750 -1000	HSDI 750 -2000	HSDI 750 -3000	HSDI 750 -5000
<b>Parameter ▼</b>					
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	0.315	0.157	0.105	0.063
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

**Ordering Information**

For standard HSDI 750, order by model number with range.  
 For reversed output HSDI 750, order by model number with range and add suffix "R".  
 For HSDI 750 with metric threaded core, order as above and add -006 after range.  
 For HSDI 750 with Teflon™ bore liner, order as above and add -010 after range.  
 For metric threaded core and Teflon™ bore liner, order as above and add -016 after range.  
 For accessories, please visit our website at [www.macrosensors.com](http://www.macrosensors.com).



*Innovators in Position Sensing*

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