

# GHSIR 750 Series Spring-Loaded 4-20 mA Position Transmitters



## Description

The Macro Sensors GHSIR 750 Series of 3/4 inch diameter spring-loaded, loop-powered LVDTs are designed for a wide range of position monitoring, feedback, and dimensional gaging 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. The input/output connections are made through a radially mounted sealed connector, which results in a much reduced installed length. A mating connector plug is supplied with each unit. The through-bore design allows for air purging of the sensor's bearings to remove potential contaminants.

The sensor consists of a spring loaded shaft running in a precision sleeve bearing and connected to the core of an LVDT. The use of a precision sleeve bearing results in measurement repeatability of 0.0001 inches (2.5  $\mu\text{m}$ ) or better. The probe shaft is fully extended by a spring exerting a nominal force of 6 to 20 ounces depending upon total range. The contact tip supplied is an AGD standard number 9 made from black oxide hardened tool steel. It is fully interchangeable with other 4-48-threaded AGD contact tips.

## Features

- Full ranges of 0.100 inch to 4.00 inches
- Radial connector, mating plug included
- 4 to 20 mA input/output
- Repeatability of 0.0001 inch
- Non-linearity of  $\pm 0.10\%$  of FRO or better
- Coil environmentally sealed to IEC IP-68
- Through-bore design

## Applications

- Industrial gaging systems
- Steam turbine shell expansion
- Safety valve seating verification
- Materials testing apparatus
- Pinch and gap roller alignment

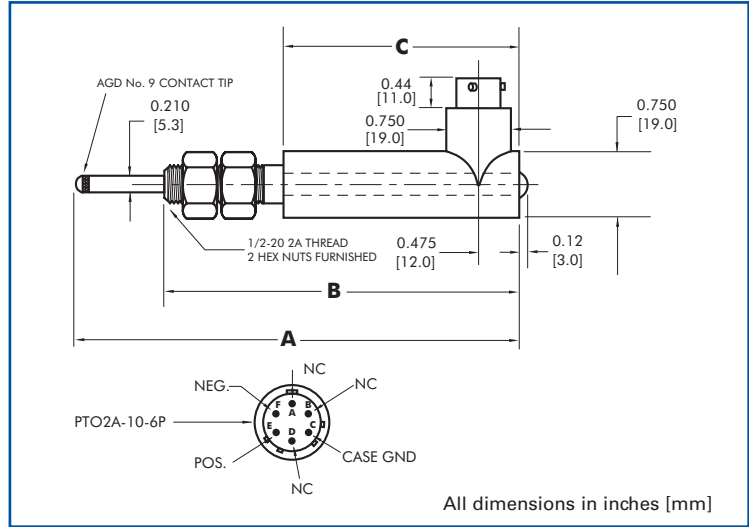
GHSIR 750 Series transmitters offer the frictionless operation, high resolution, excellent repeatability, and low hysteresis associated with LVDT technology, along with the convenience and simplicity of precalibrated 4-20 mA current loop operation. The unit can be operated either as 2-wire loop-powered 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 0.100 inch (2.5 mm) to 4.00 inches (100 mm), the maximum linearity error for a GHSIR 750 Series sensor is  $\pm 0.10\%$  of full range output using a statistically best-fit straight line derived by the least squares method.

For simplified mounting the GHSIR 750 Series has a 1/2-20 UNF-2A thread on the front of the housing, permitting the user to install the LVDT in a mating threaded part or by using the two hex nuts furnished with the sensor. This results in a ready-to-use package for position measurements and longer range gaging applications.

**General Specifications**

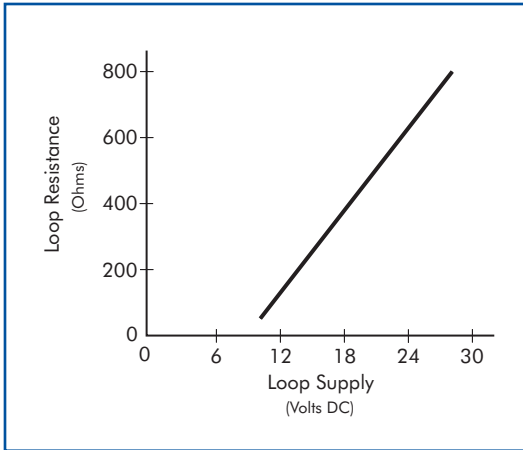
- Loop Supply Voltage:** 10 V to 28 V DC
- Loop Resistance (Min.):** 50 Ohms
- Output Current:** 4-20 mA, 2-wire loop
- Output Noise & Ripple:**  $\leq 10 \mu\text{Arms}$
- Frequency Response (-3dB):** 50 Hz (nominal)
- Linearity Error:**  $\leq \pm 0.10\%$  of FRO
- Repeatability Error:**  $< 0.0001$  inch (2.5  $\mu\text{m}$ )
- 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)



**Specifications**

Model ▶	GHSIR 750 -100	GHSIR 750 -250	GHSIR 750 -500	GHSIR 750 -1000	GHSIR 750 -2000	GHSIR 750 -4000
Parameter ▼						
Nominal Range (inches)	0.10	0.25	0.50	1.00	2.00	4.00
Nominal Range (mm)	2.5	6.3	12.5	25	50	100
Scale Factor (mA/inch)	160	64	32	16	8	4
Scale Factor (mA/mm)	6.4	2.6	1.28	0.64	0.32	0.16
Pretravel (inches)	0.12	0.13	0.10	0.10	0.05	0.02
Pretravel (mm)	3.0	3.3	2.5	2.5	1.3	0.5
Overtravel (inches)	0.12	0.13	0.10	0.10	0.05	0.02
Overtravel (mm)	3.0	3.3	2.5	2.5	1.3	0.5
Dimension "A" (inches)	5.46	6.10	6.86	11.36	13.82	21.75
Dimension "A" (mm)	139	155	174	289	351	553
Dimension "B" (inches)	4.36	4.99	5.75	9.87	11.40	17.19
Dimension "B" (mm)	111	127	146	251	291	437
Dimension "C" (inches)	2.82	3.44	4.20	6.70	8.20	11.71
Dimension "C" (mm)	72	87	107	170	208	297
Weight (ounces)	3.1	3.6	4.3	6.4	6.7	10.5
Weight (g)	85	102	170	180	185	296

**Loop Resistance vs. Minimum Loop Supply Voltage**



**Ordering Information**

Order by model number with range  
 For accessories, please visit our website at [www.macrosensors.com](http://www.macrosensors.com).



*Innovators in Position Sensing*

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