GHSIR 750-A Series

Air-Extend/Spring-Retract 4-20 mA Position Transmitters

Features

- Low pressure air-extend/spring-retract plunger
- Full ranges of 0.100 inch to 4.00 inches
- 4 to 20 mA input/output
- Non-linearity of ±0.10% of FRO or better
- Repeatability of 0.0001 inch
- Through-bore design with radial connector; mating plug included
- Coil environmentally sealed to IEC IP-68

Applications

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

Description

The Macro Sensors GHSIR 750-A Series of 3/4 inch diameter air-extend/spring-retract, loop powered LVDTs are designed for a wide range of cycled position monitoring, feedback, and automated dimensional gaging applications where it is necessary or desirable to move the probe out of the way between readings. 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 sensor consists of an air-extend/spring-retract shaft running in a precision sleeve bearing and connected to the core of an LVDT. The shaft is extended by introduction of a low-pressure (10-30 psi), clean, dry air supply, with a regulated flow, through a 1/4 inch barbed fitting on the end of the unit. With the release of pressure, an internal spring returns the probe to its normal position. The use of a precision sleeve bearing results in measurement repeatability of 0.0001 inches (2.5 μm) or better. 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. The combination of air actuation and a through-bore design allows for repeated purging of the sensor's bearings to remove potential contaminants.

GHSIR 750-A 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 measurement ranges of 0.100 inch (2.5 mm) to 4.00 inches (100 mm), the linearity error for a GHSIR 750-A Series sensor is ±0.10% of full range output or better using a statistically best-fit straight line derived by the least squares method.

For simplified mounting the GHSIR 750-A 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.

For additional information and important installation considerations, we strongly urge you to visit www.macrosensors.com/air_extend_lvdts

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: ≤10 μArms

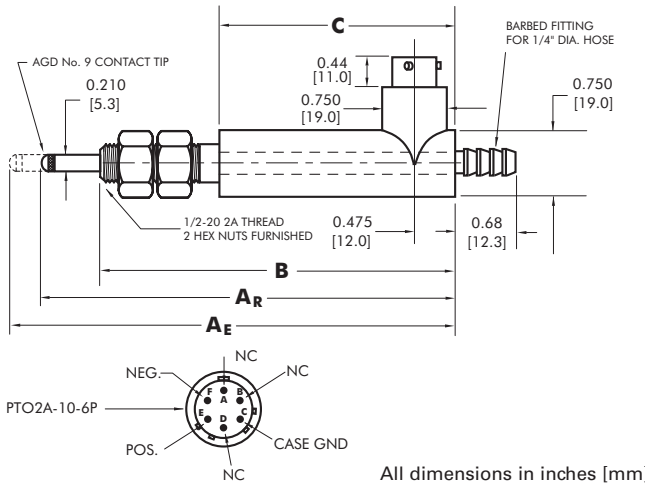
Frequency Response (-3dB): 50 Hz (nominal)

Linearity Error: ≤ ±0.10% of FRO

Repeatability Error: <0.0001 inch (2.5 μm)

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)

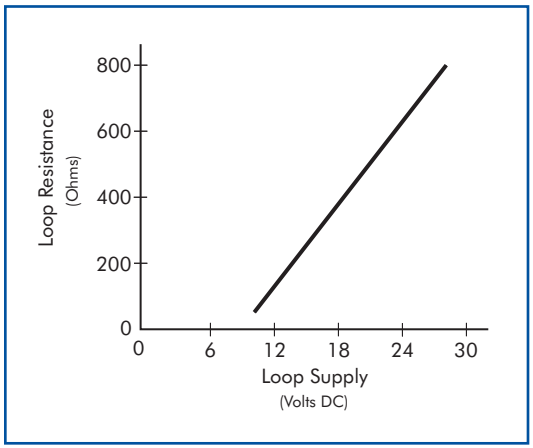


All dimensions in inches [mm]

Specifications

Model ▶ / Parameter ▼	GHSIR 750-A -100	GHSIR 750-A -250	GHSIR 750-A -500	GHSIR 750-A -1000	GHSIR 750-A -2000	GHSIR 750-A -4000
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_R" (inches)	5.12	5.59	6.16	10.16	11.72	17.71
Dimension "A_R" (mm)	130	142	156	258	298	450
Dimension "A_E" (inches)	5.46	6.10	6.86	11.36	13.82	21.75
Dimension "A_E" (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