GHSAR 750 Series
Spring-Loaded AC-LVDT Position Sensors

Features

- Ranges of ±0.050 inch to ±2.00 inches
- Radial connector, mating plug included
- Repeatability of 0.000025 inch
- Non-linearity less than ±0.25% of FRO
- Coil environmentally sealed to IEC IP-68
- Through-bore design

Applications

- Industrial gaging systems
- Electronic dial indicators
- Fabricated metal products gaging
- Materials testing apparatus
- Large shaft TIR measurements

Description

The Macro Sensors GHSAR 750 Series of 3/4 inch diameter spring-loaded AC-LVDTs are designed for a wide range of position measurement 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. Electrical termination is through a radially mounted sealed connector, which results in a much reduced installed length. The mating connector plug is supplied with a 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 0.000025 inches (0.6 μm) or better. The output from the LVDT can be connected to any standard LVDT signal conditioner and then passed to a gaging column display, digital readout, or computer based data acquisition system.

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 chrome plated hardened tool steel. It is fully interchangeable with other AGD contact tips.

Available in ranges of ±0.050 inch (±1.25 mm) to ±2.00 inches (±50.0 mm), the maximum linearity error for a GHSAR 750 Series sensor is ±0.25% of full range output using a statistically best-fit straight line derived by the least squares method.

For simplified mounting the GHSAR 750 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.

All GHSAR 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 GHSAR 750 Series LVDT. Details can be found in series 9000 technical bulletins.

General Specifications

Input Voltage: 3.0 V_{rms} (nominal)

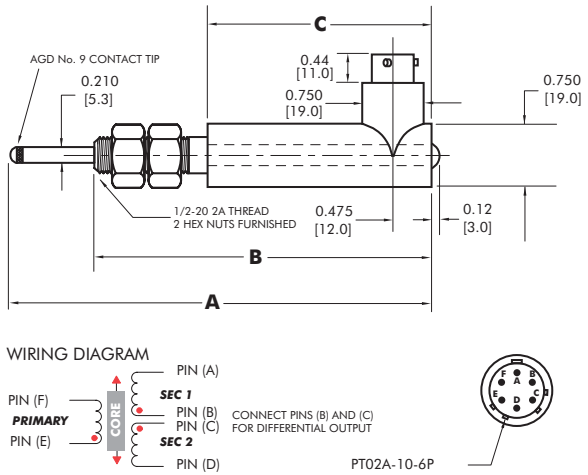
Input Frequency: 2.5 to 3.0 kHz

Linearity Error: <±0.25% of FRO

Repeatability Error: <0.000025 inch (0.6 μm)

Operating Temperature: -65°F to +220°F (-55°C to +105°C)

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



All dimensions in inches [mm]

Specifications

Model ▶ / Parameter ▼	GHSAR 750 -050	GHSAR 750 -125	GHSAR 750 -250	GHSAR 750 -500	GHSAR 750 -1000	GHSAR 750 -2000
Nominal Range (inches)	±0.050	±0.125	±0.25	±0.50	±1.00	±2.00
Nominal Range (mm)	±1.25	±3.0	±6.3	±12.5	±25.0	±50.0
Sensitivity (mV/V/.001 in)	6.1	3.9	2.5	0.65	0.61	0.37
Sensitivity (mV/V/mm)	240	153	98	26	24	14
Primary Impedance (Ω)	325	735	1400	1200	1250	2150
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)	4.61	5.26	6.02	10.54	12.81	20.91
Dimension "A" (mm)	117	134	153	268	322	531
Dimension "B" (inches)	3.51	4.15	4.91	9.05	10.51	16.35
Dimension "B" (mm)	89	105	125	230	267	415
Dimension "C" (inches)	1.97	2.60	3.35	5.88	7.34	10.87
Dimension "C" (mm)	50	66	85	149	186	276
Weight (ounces)	2.9	3.4	4.0	6.0	6.3	10.2
Weight (g)	82	96	113	170	179	290

Ordering Information

Order by model number with range