AIR-EXTEND/ SPRING-RETRACT

AC-LVDT Position Sensors MACRO GHSAR 750-A

Overview

The Macro Sensors GHSAR 750-A Series of 3/4 inch diameter air-extend/spring-retract AC-LVDTs are designed for a wide range of cycled position measurement 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. Electrical termination is through a radially mounted sealed connector, which results in a much reduced installed length. The mating connector plug is supplied with the 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 barbed fitting on the end of the unit for ¼ inch I.D. hose. With the release of pressure, an internal spring returns the probe to its retracted position. The use of a precision sleeve bearing results in measurement repeatability of ±0.01% of full range output 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. 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. 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-A Series LVDT. For additional information on signal conditioners, please visit our website at www.macrosensors.com

Available in ranges of ±0.050 inch (±1.25 mm) to ±2.00 inches (±50 mm), the maximum linearity error for a GHSAR 750-A 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-A 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.

Benefits

- Low pressure air-extend/spring-retract plunger
- Ranges of ±0.050 inch to ±2.00 inches
- Non-linearity less than ±0.25% of FRO
- Repeatability of ±0.01% of FRO
- Radial connector with mating plug included
- Coil environmentally sealed to IEC IP-68

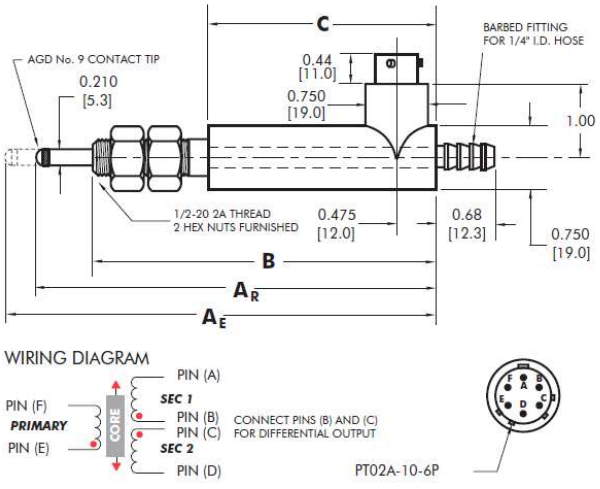
Applications

- Cycled measurement functions
- Industrial gaging systems
- Fabricated metal products gaging
- Large shaft TIR measurements

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% FRO
Operating Temperature	-65°F to +220°F (-55°C to +105°C)
Thermal Coefficient of Sensitivity	-0.01%/°F (nominal) (-0.02%/°C nominal)
Air Supply	10-30 psi, clean, dry Flow regulatable

Dimensions



All dimensions in inches [mm]

Specifications

Model ▶ / Parameter ▼	GHSAR 750 -050-A	GHSAR 750 -125-A	GHSAR 750 -250-A	GHSAR 750 -500-A	GHSAR 750 -1000-A	GHSAR 750 -2000-A
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_R" (inches)	4.27	4.75	5.32	9.34	10.71	16.87
Dimension "A_R" (mm)	108	121	135	237	272	428
Dimension "A_E" (inches)	4.61	5.26	6.02	10.54	12.81	20.91
Dimension "A_E" (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. For accessories and compatible signal conditioners, please contact the factory.

NORTH AMERICA

AST Macro Sensors,
a TE Connectivity company
Tel: 800-522-6752
Email: customercare.pens@te.com

TE.com/sensorsolutions

GHSAR 750-A 11/01/15