

GHS DR 750 Series

Spring-Loaded DC-LVDT Position Sensors



Description

The Macro Sensors GHS DR 750 Series of 3/4 inch diameter spring-loaded DC-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 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.

Features

- Ranges of ± 0.020 inch to ± 2.00 inches
- Radial connector, mating plug included
- ± 15 V DC input, precalibrated 0 to ± 10 V DC output
- Repeatability of 0.000025 inch
- Non-linearity less than $\pm 0.25\%$ 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

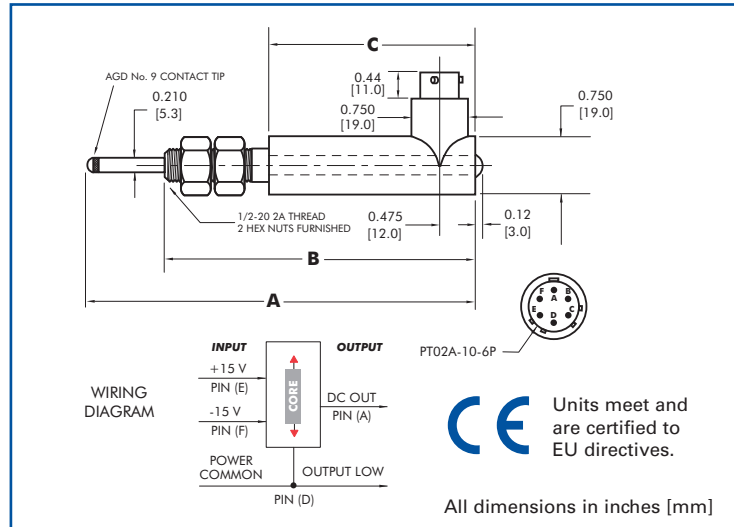
Built-in electronics result in position sensors that operate from a DC input and generate a precalibrated DC output. The output from the GHS DR 750 Series are designed to operate in conjunction with many PLCs, digital indicators, A/D converters, computer-based data processors, and QC data collection systems.

Available in ranges of ± 0.020 inch (± 0.51 mm) to ± 2.00 inches (± 50.0 mm), the maximum linearity error for a GHS DR 750 Series sensor is $\pm 0.25\%$ of full range output using a statistically best-fit straight line derived by the least squares method.

For simplified mounting the GHS DR 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.

General Specifications

- Input Power:** ± 15 V DC, $\pm 5\%$
 ± 25 mA (nominal)
- Full Scale Output:** 0 to ± 10 V DC
- Linearity Error:** $< \pm 0.25\%$ of FRO
- Repeatability Error:** < 0.000025 inch
($0.6 \mu\text{m}$)
- Operating Temperature:** 0°F to $+160^\circ\text{F}$
(-20°C to $+70^\circ\text{C}$)
- Thermal Coefficient of Scale Factor:** $-0.015\%/^\circ\text{F}$ (nominal)
 $(-0.027\%/^\circ\text{C})$ (nominal)



Specifications

Model ▶	GHS DR 750 -020	GHS DR 750 -050	GHS DR 750 -125	GHS DR 750 -250	GHS DR 750 -500	GHS DR 750 -1000	GHS DR 750 -2000
Parameter ▼							
Nominal Range (inches)	± 0.020	± 0.050	± 0.125	± 0.25	± 0.50	± 1.00	± 2.00
Nominal Range (mm)	± 0.51	± 1.25	± 3.0	± 6.3	± 12.5	± 25.0	± 50.0
Scale Factor (V/inch)	500	200	80	40	20	10	5
Scale Factor (V/mm)	19.7	8.0	3.3	1.6	0.8	0.4	0.2
Pretravel (inches)	0.12	0.12	0.13	0.10	0.10	0.05	0.02
Pretravel (mm)	3.0	3.0	3.3	2.5	2.5	1.3	0.5
Overtravel (inches)	0.10	0.12	0.13	0.10	0.10	0.05	0.02
Overtravel (mm)	2.5	3.0	3.3	2.5	2.5	1.3	0.5
Dimension "A" (inches)	5.46	5.46	6.10	6.86	11.36	13.82	21.75
Dimension "A" (mm)	139	139	155	174	289	351	553
Dimension "B" (inches)	4.36	4.36	4.99	5.75	9.87	11.40	17.19
Dimension "B" (mm)	111	111	127	146	251	291	437
Dimension "C" (inches)	2.82	2.82	3.44	4.20	6.70	8.20	11.71
Dimension "C" (mm)	72	72	87	107	170	208	297
Weight (ounces)	3.1	3.1	3.6	4.3	6.4	6.7	10.5
Weight (g)	85	85	102	170	180	185	296

Ordering Information

Order by model number with range