

GCA

Schaevitz™ Precision Gage Heads, Spring-Loaded

- Measurement ranges from ± 1.27 mm to ± 50.8 mm
- Spring-loaded LVDT
- Linearity 0.25 % full range
- Output signal 13 ... 165 mV/V per mm
- Supply voltage 3 V_{rms}



The GCA Series heavy-duty gage heads enable high performance in environments containing moisture, dirt, and fluid contaminants. Gage heads are spring loaded LVDTs (Linear Variable Differential Transformers) with precision linear bearings.

These robust high-temperature gage heads allow measurements over long strokes up to ± 2.0 inches [± 50 mm]. The maximum spring force is typically less than 8 oz [227 grams]. A removable black-chromed, hardened tool steel tip is threaded (4-48UNF-2A) to the working end. Internal construction prevents the core and shaft from rotating as they move longitudinally. The integral electrical connector (welded) provides for easy installation and allows replacing a damaged cable without sacrificing the sensor. Installation and adjustment are facilitated by an external $\frac{1}{2}$ -20 mounting thread and the two locknuts supplied with each unit.

The ruggedness, long life cycle, and very high reliability of the GC Series provide the lowest cost of ownership over the life of the equipment onto which they are installed. The one-piece front end (barrel which contains the bearing assembly), machined from solid stainless steel bar, coupled with a bronze bushing, has far greater resistance to bending forces and side loads compared to other designs. This is particularly important on the longer stroke versions; it reduces the common risk of probe damage/bending during installation or maintenance of industrial equipment. The GC Series designs also require fewer parts and weld joints, thereby increasing overall structural integrity and reliability.

Features

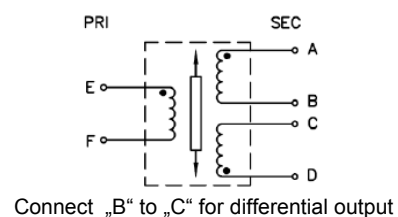
- All-welded construction
- Resistant to harsh environments
- Calibration certificate supplied with each unit

■ Specifications

Supply voltage:	3 V _{rms} (sinus wave)
Frequency range:	2.5 kHz as tested (4 Hz ... 10 kHz)
Linearity:	± 0.25 % full scale
Null voltage	≤ 0.5 % full scale output
Repeatability:	0.6 μ m (25 μ inches)
Operating temperature:	-55 ... +150 °C
Shock survival:	1000 g for 11 ms (half-sine)
Vibration tolerance:	20 g up to 2 kHz
Housing material:	AISI 400 stainless steel
Electr. termination:	6-pin MS-type connector
NEMA IEC60529-Rating	IP68 to 70 bar with use of proper mating connector plug

Notes:

All values are nominal unless otherwise noted
 FS: Full Scale is 2X for $\pm X$ stroke
 FSO: Full Scale Output is the output at X position for $\pm X$ stroke



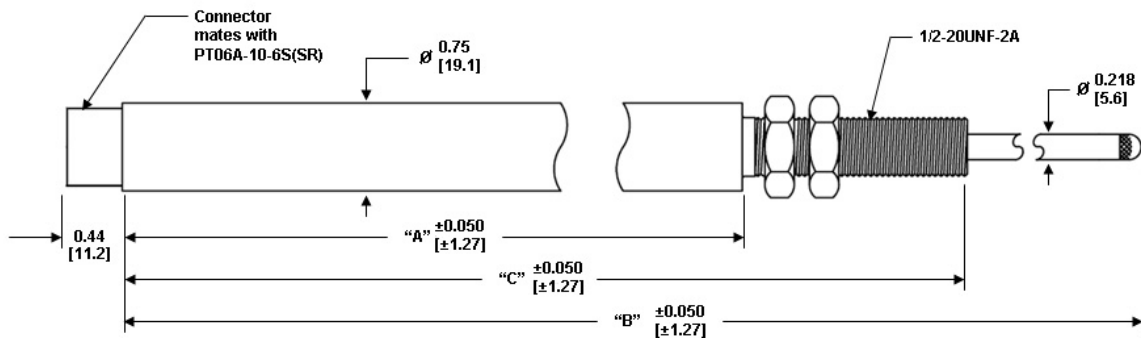
Model	Gaging range		Sensitivity mV/V per		Output at stroke ends *	Impedance**		Phase shift °
	inch	mm	0.001 inch	mm		Pri Ohm	Sec Ohm	
GCA-121-050	±0.050	±1.27	4.2	165.4	210	430	950	+6
GCA-121-125	±0.125	±3.17	2.4	94.4	300	1710	1820	+5
GCA-121-250	±0.25	±6.35	1.6	63.0	400	800	940	+5
GCA-121-500	±0.50	±12.7	1.1	43.3	550	900	1150	+2
GCA-121-1000	±1.0	±25.4	0.84	33.1	840	900	2100	+1
GCA-121-2000	±2.0	±50.8	0.34	13.4	680	525	535	-1

* Unit for output at stroke ends is millivolt per volt of excitation

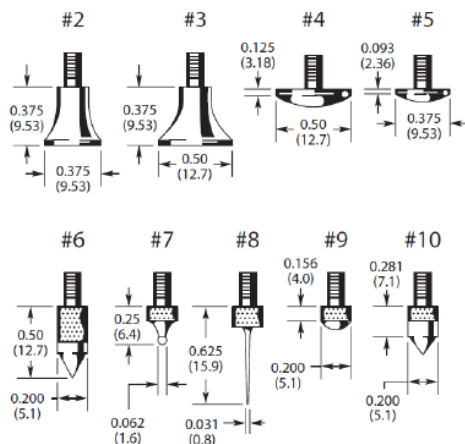
** with 2.5 kHz supply

Mechanical Specifications

Model	Pretravel		Overtravel, min.		Spring force N	Dimensions, approx.						Weight	
	inch	mm	inch	mm		A		B		C		oz	g
GCA-121-050	0.26	6.6	0.15	3.8	1 ... 1.6	1.91	48.5	4.33	110.0	3.28	83,31	2.2	62
GCA-121-125	0.35	8.9	0.15	3.8	1 ... 1.6	2.75	69.9	5.14	130.6	4.12	104.6	2.9	82
GCA-121-250	0.15	3.8	0.15	3.8	1 ... 1.6	3.61	91.7	6.02	152.9	4.98	126.5	3.2	91
GCA-121-500	0.18	4.6	0.90	22.9	1 ... 2.2	5.30	134.6	10.76	273.3	8.29	210.6	5.0	142
GCA-121-1000	0.07	1.8	0.15	3.8	1 ... 2.2	7.56	192.0	13.01	330.5	10.55	268.0	7.5	213
GCA-121-2000	0.10	2.5	0	0	1 ... 2.2	10.89	276.6	20.94	531.9	16.37	415.8	13	369



Optional Contact Tips



All dimensions in inches, values in brackets in mm, approx. values.

All drawings are for information only and not intended for construction purpose. Please ask for detailed drawings.

Due to continual product development, ALTHEN and partners reserve the right to vary the foregoing details without prior notice.