

GCA/GCD Series

Precision Spring Loaded LVDT



GCA/GCD Series genuine Schaevitz® gage heads with stainless steel construction enables high performance in environments containing moisture, dirt and fluid contaminants. Electronic components (DC version) are inside the hermetically sealed housing for added protection against hostile conditions. These heavy-duty, high-temperature (AC only) transducers feature long strokes up to $\pm 2.0"$ (50mm). Maximum spring force is typically 8 oz (226.8g), dependent upon probe position. The working end or probe has a removable black-chromed, hardened tool steel tip threaded (4-48 UNF-2A) to the probe. Schaevitz® replacement and alternate contact tips are available. Tips are also interchangeable with AGD dial indicator tips.

Internal construction prevents the core and shaft from rotating as they move longitudinally. Integral electrical connectors allow for easy cable replacement if damage should occur. Installation and adjustment are facilitated by an external $\frac{1}{2}$ -20 mounting thread. Two locknuts are provided with each LVDT.

GC series gage heads are available in both AC and DC versions. AC-operated units require external signal conditioning (see our range of Instrumentation products on our web site); DC-operated units integrate the core, LVDT and all necessary electronics under a single housing. Use of monolithic, surface mount circuitry eliminates most of the volume, weight and cost of conventional AC excitation, amplification and demodulation equipment.

FEATURES

- CE compliant (DC models)
- All-welded construction
- Resistant to harsh environments
- MS type connector (MIL-C-5015)
- Hermetically sealed electronics
- Calibration certificate supplied with every unit
- AC models compatible with all Schaevitz® signal conditioners
- Special contact tips available

APPLICATIONS

- In-process measurements, to close feedback loop with PLC or CNC controller
- Environments requiring hermetically sealed transducers
- High temperatures (300°F for AC units)

OPTIONS

- Mating connector
- Special contact tips
- Air extend, spring retract



Specifications – AC operated models

Excitation voltage	3-Volts rms (nominal)
Excitation frequency	2.5kHz as tested (400 Hz to 10 kHz)
Linearity	+/- 0.25% of full range output
Null voltage	$\leq 0.5\%$ full scale output
Repeatability	0.000025-Inch (0.1 micron)
Operating temperature range	-65°F to 300°F (-55°C to 150°C)
Shock survival	1,000 g for 11 m-Sec (half-sine)
Vibration tolerance	20 G's up to 2 kHz
Coil form material	High density, glass-filled polymer
Housing material	AISI 400 series stainless steel
Electrical termination	6-pin MS type connector

Specification – DC operated models

Input voltage	± 15 -Volts dc (nominal)
Input current	30mA (max)
Linearity	$\pm 0.25\%$ of full range output
Repeatability	0.000025-Inch (0.1 Micron)
Operating Temperature	32° to 160°F (0 to 70°C)
Survival Temperature	-65° to 200°F (-55° to 95°C)
Shock Survival	250 g for 11 m-Sec (half-sine)
Vibration Tolerance	10 g up to 2 kHz
Coil Form Material	High density, glass-filled polymer
Housing material	AISI 400 series stainless steel
Electrical Termination	6-pin MS type connector



mechanical & electrical specifications

GCA specifications @ 2.5 kHz – AC operated models

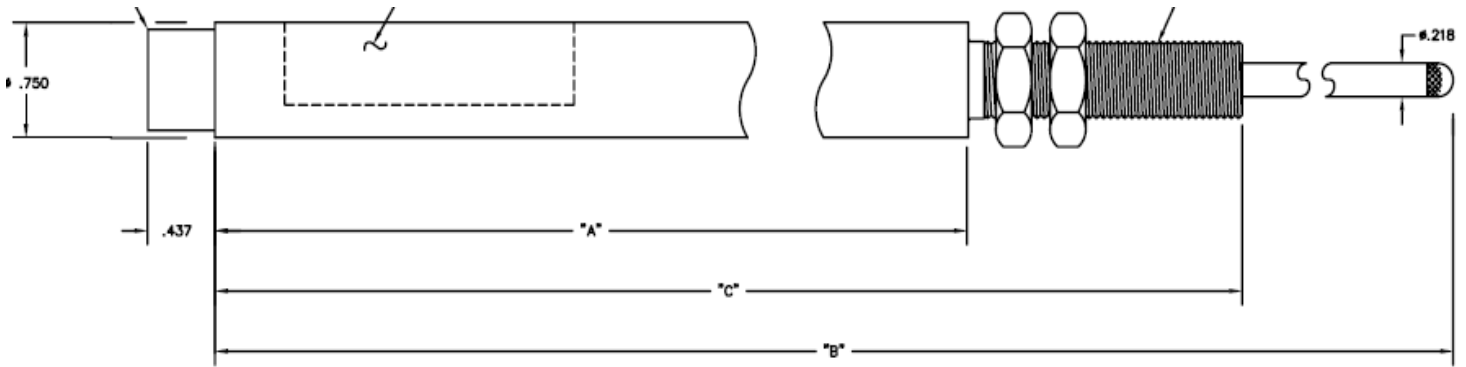
Model number	Note: All units in [] are metric					
	GCA-121-050	GCA-121-125	GCA-121-250	GCA-121-500	GCA-121-1000	GCA-121-2000
Gaging range	±0.050"	±0.125"	±0.250"	±0.500"	±1.000"	±2.00"
Millimeters	[±1.27]	[±3.17]	[±6.35]	[±12.7]	[±25.4]	[±50.8]
Phase shift	+6	+5	+5	+2	+1	-1
Sensitivity (mV/Volt/.001-Inch)	4.2	2.4	1.6	1.1	0.84	0.34
Impedance (Ω)						
Primary	430	1710	800	900	900	525
Secondary	950	1820	940	1150	2100	535
Pre-travel						
Inches	0.26	0.30	0.06	0.18	0.01	0.1
Millimeters	[6.6]	[7.6]	[1.5]	[4.5]	[0.3]	[2.5]
Minimum over-travel						
Inches	.15	.15	.15	.20	.10	0
Millimeters	3.8	3.8	3.8	5.1	2.5	0
Spring force (oz)	3.5 to 5.8	3.5 to 5.8	3.5 to 5.8	3.2 to 8.0	3.2 to 8.0	3.2 to 8.0
Grams	[99 to 164]	[66 to 164]	[99 to 164]	[91 to 227]	[91 to 227]	[91 to 227]
Dimensions						
A (±0.01")						
Inches	1.9	2.75	3.61	5.29	7.55	20.89
Millimeters	[48.3]	[69.9]	[91.7]	[134.4]	[191.8]	[276.6]
B (±0.03")						
Inches	4.33	5.14	6.10	10.75	13.01	20.94
Millimeters	[110.0]	[130.6]	[154.6]	[273.1]	[330.5]	[531.9]
C (±0.02")						
Inches	3.27	4.12	4.99	8.27	10.53	16.37
Millimeters	[102.1]	[104.6]	[126.7]	[210.1]	[267.5]	[415.8]
Weight						
Ounces	2.2	2.9	3.17	5.0	7.5	13
Grams	[64]	[82]	[90]	[142]	[213]	[369]

GCD specifications – DC operated models

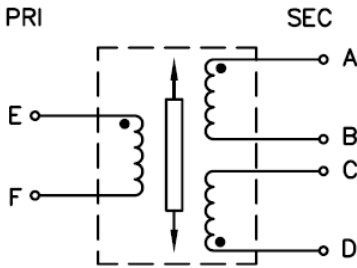
Model number	GCD-121-050	GCD-121-125	GCD-121-250	GCD-121-500	GCD-121-1000	GCD-121-2000
Gaging Range	±0.050"	±0.125"	±0.250"	±0.500"	±1.000"	±2.00"
Millimeters	[±1.27]	[±3.17]	[±6.35]	[±12.7]	[±25.4]	[±50.8]
Sensitivity (Volts / Inch)	200	80	40	20	10	5
Pre-travel						
Inches	0.30	.35	.18	.20	0.01	0.1
Millimeters	[7.62]	[8.8]	[4.5]	[5.08]	[0.3]	[2.25]
Minimum Over-travel						
Inches	.39	.14	.03	1.0	.10	0
Millimeters	[9.4]	[3.5]	[.76]	[25.4]	[2.5]	[0]
Spring force (oz)	3.5 to 5.8	3.5 to 5.8	3.5 to 5.8	3.2 to 8.0	3.2 to 8.0	3.2 to 8.0
Grams	[99 to 14]	[66 to 164]	[99 to 164]	[91 to 227]	[91 to 227]	[91 to 227]
Dimensions						
A (±0.01")						
Inches	2.66	3.50	4.37	6.06	8.31	11.48
Millimeters	[67.6]	[88.9]	[111.0]	[153.9]	[211.1]	[291.6]
B (±0.03")						
Inches	5.08	5.90	6.77	11.53	13.76	21.52
Millimeters	[129.0]	[149.9]	[172.0]	[292.9]	[349.5]	[546.6]
C (±0.02")						
Inches	4.02	4.87	5.74	9.05	11.29	16.96
Millimeters	[102.1]	[123.7]	[145.8]	[229.9]	[286.8]	[430.8]
Weight						
Ounces	2.5	3.2	3.5	5.5	8.0	14
Grams	[71]	[93]	[100]	[156]	[227]	[397]

GCA/GCD Series

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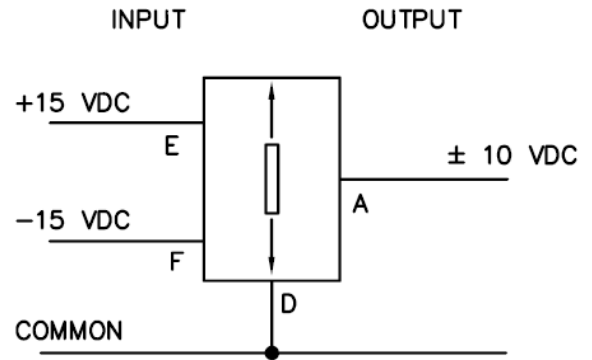
wiring – ac models



WIRING SCHEMATIC

CONNECT (B) TO (C) FOR DIFFERENTIAL OUTPUT

wiring – dc models



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ordering information

Specify the appropriate model number, followed by the desired gaging range suffix. For example, GCA-121-050 is AC operated with a ± 0.050 " range. Special contact tips are also available and can be ordered separately.

Model number

GCA-121
GCD-121

Operation

AC
DC

Gaging range

050
125
250
500
1000
2000

Description

± 0.050 " (1.27mm)
 ± 0.125 " (3.17mm)
 ± 0.250 " (6.35mm)
 ± 0.50 " (12.7mm)
 ± 1.00 " (25.4mm)
 ± 2.00 " (50.8mm)

CONTATO

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