

GCA/GCD Series Precision Gage Heads

Spring-Loaded Design for $\pm 0.050''$ to $\pm 2.00''$ Range Measurement

DESCRIPTION

GCA/GCD Series gage head with stainless steel construction enables the performs in environments containing moisture, dirt and other contaminants. Electronic components are hermetically sealed for added protection against hostile conditions. These are heavy duty, long stroke units with ranges 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 chrome plated, hardened tool steel tip threaded to the probe with a 4-48 UNF-2A threading. Schaevitz® replacement and alternate contact tips are available (see page 100). Tips are also interchangeable with AGD dial indicator tips.

Internal construction prevents the core and shaft from rotating as they move longitudinally. Units terminating into connectors allow for easy cable replacement if damage should occur. Installation and adjustment are facilitated by external threading; locknuts are provided.

GCA/GCD Series gage heads are available in AC and DC versions. AC-operated units utilize external signal



conditioning (see the Instrumentation section of this catalog); DC-operated units incorporate the core, LVDT and all necessary electronics in one 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
- ◆ Electronics Hermetically Sealed
- ◆ Calibration Certificate Supplied with Every Gage Head
- ◆ Compatible with All Schaevitz® Signal Conditioners
- ◆ Special Contact Tips

APPLICATIONS

- ◆ In-Process Measurements to Close Loop with PLC or CNC Controller
- ◆ Environments Requiring Hermetically Sealed Transducers
- ◆ High Temperatures (300°F for AC units)

specifications

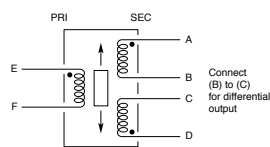
AC-Operated models

Excitation	3 V rms (nom)
Frequency Range	400 Hz to 10 kHz
Null Voltage	Less than 0.5% full scale output
Linearity	$\pm 0.25\%$ of full range output
Repeatability	0.000025" (0.0006 mm)
Operating Temperature	-65°F to 300°F
Range	(-55°C to 150°C)
Shock Survival	1000 g for 11 milliseconds
Vibration Tolerance	20 g up to 2 kHz
Housing Material	AISI 400 series stainless steel
Electrical Termination	6-pin connector

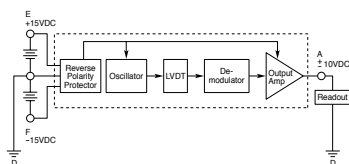
DC-Operated models

Excitation	± 15 VDC ± 30 mA max
Null Voltage	0 VDC
Linearity	$\pm 0.25\%$ of full range output
Repeatability	0.000025" (0.0006 mm)
Operating Temperature	32°F to 160°F
Range	(-0°C to 70°C)
Shock Survival	250 g for 11 milliseconds half sine
Vibration Tolerance	10 g up to 2 kHz
Housing Material	AISI 400 series stainless steel
Electrical Termination	6-pin connector

wiring – AC models



wiring – DC models



GCA/GCD Series Precision Gage Heads

GCA Specifications @ 2.5 kHz – AC-Operated Models

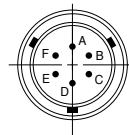
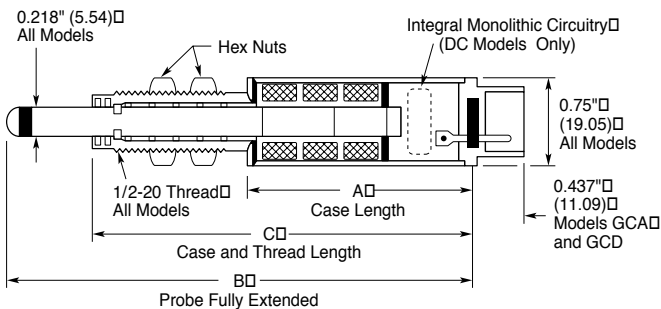
Model Number	GCA-121-050	GCA-121-125	GCA-121-250	GCA-121-500	GCA-121-1000	GCA-121-2000
Gaging Range	±0.050" (±1.27mm)	±0.125" (±3.17mm)	±0.250" (±6.35mm)	±0.500" (±12.7mm)	±1.000" (±25.4mm)	±2.00" (±50.8mm)
Phase Shift	+6°	+5°	+5°	+2°	+1°	-1°
Sensitivity (mV/V/0.001")	4.2	2.4	1.6	1.1	0.84	0.34
Impedance (Ohms)						
Primary	430	1710	800	900	900	525
Secondary	950	1820	940	1150	2100	535
Pretravel (Nominal)	0.26" (6.6mm)	0.30" (7.6mm)	0.06" (1.5mm)	0.18" (4.5mm)	0.01" (0.3mm)	0.1"
Minimum Overtravel	0.15" (3.8mm)	0.15" (3.8mm)	0.15" (3.8mm)	0.20" (5.1mm)	0.10" (2.5mm)	0
Spring Load Over	3.5 to 5.8 oz.	3.5 to 5.8 oz.	3.5 to 5.8 oz.	3.2 to 8.0 oz.	3.2 to 8.0 oz.	3.2 to 8.0 oz.
Gaging Range	(99 to 164g)	(99 to 164g)	(99 to 164g)	(91 to 227g)	(91 to 227g)	(91 to 227g)
Dimensions						
A (±0.01"/0.25mm)	1.90" (48.3mm)	2.75" (69.9mm)	3.61" (91.7mm)	5.29" (134.4mm)	7.55" (191.8mm)	10.89" (276.6mm)
B (±0.03"/0.76mm)	4.33" (110.0mm)	5.14" (130.6mm)	6.10" (154.9mm)	10.75" (273.1mm)	13.01" (330.5mm)	20.94" (531.9mm)
C (±0.02"/0.50mm)	3.27" (8.1mm)	4.12" (104.6mm)	4.99" (126.7mm)	8.27" (210.1mm)	10.53" (267.5mm)	16.37" (415.8mm)
Weight	2.2 oz (64g)	2.9 oz. (82g)	3.17 oz. (90g)	5.0 oz. (142g)	7.5 oz. (213g)	13 oz. (369g)

GCD Specifications – DC-Operated Models

Model Number	GCA-121-050	GCA-121-125	GCA-121-250	GCA-121-500	GCA-121-1000	GCA-121-2000
Gaging Range	±0.050" (±1.27mm)	±0.125" (±3.17mm)	±0.250" (±6.35mm)	±0.500" (±12.7mm)	±1.000" (±25.4mm)	±2.000" (±50.8mm)
Sensitivity (V/1")	200	80	40	20	10	5
Pretravel (Nominal)	0.30" (7.62mm)	0.35" (8.8mm)	0.18" (4.5mm)	0.20" (5.08mm)	0.01" (.25mm)	0.1"
Minimum Overtravel	0.39" (9.4mm)	0.14" (3.5mm)	0.03" (0.76mm)	1.00" (25.4mm)	0.10" (2.5mm)	0
Spring Load Over	3.5 to 5.8 oz.	3.5 to 5.8 oz.	3.5 to 5.8 oz.	3.2 to 8.0 oz.	3.2 to 8.0 oz.	3.2 to 8.0 oz.
Gaging Range	(99 to 164g)	(99 to 164g)	(99 to 164g)	(91 to 227g)	(91 to 227g)	(91 to 227g)
Dimensions						
A (±0.01"/0.25mm)	2.66" (67.6mm)	3.50" (88.9mm)	4.37" (111.0mm)	6.06" (153.9mm)	8.31" (211.1mm)	11.48" (291.6mm)
B (±0.03"/0.76mm)	5.08" (129.0mm)	5.90" (149.9mm)	6.77" (172.0mm)	11.53" (292.9mm)	13.76" (349.5mm)	21.52" (546.6mm)
C (±0.02"/0.50mm)	4.02" (102.1mm)	4.87" (123.7mm)	5.74" (145.8mm)	9.05" (229.9mm)	11.29" (286.8mm)	16.96" (430.8mm)
Weight	2.5 oz. (71g)	3.2 oz. (93g)	3.5 oz. (100g)	5.5 oz. (156g)	8.0 oz. (227g)	14 oz. (397g)

dimensions

in (mm)



Models GCA and GCD
MS-Type Connector
Mates with PT06A-10-65 Connector

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	Operation
GCA-121	AC
GCD-121	DC

Gaging Range	Description
050	±0.050" (1.27 mm)
125	±0.125" (3.17 mm)
250	±0.250" (6.35 mm)
500	±0.500" (12.7 mm)
1000	±1.000" (25.4 mm)
2000	±2.000" (50.8 mm)