GCD Series Gage Heads

- **Hermetically sealed housing**
- **25 µ-inch [0.6 micron] repeatability**
- **IEC IP68 rating to 1,000 PSI [70 bars]**
- **Long strokes up to ±2.0"**
- **Hardened tool steel contact tip**
- **High side load resistance**
- **Long cycle life**

DESCRIPTION

The GCD Series of heavy-duty DC operated gage heads enable high performance in environments containing moisture, dirt, and fluid contaminants. These Gage heads are spring loaded LVDTs (Linear Variable Differential Transformers) with precision linear bearings and internal conditioning electronics. Operating on a nominal ±15VDC supply, the GCD Series delivers an extremely linear, low noise ±10VDC output.

These robust gage heads allow measurements over stroke ranges from ±0.050 inch [±1.27mm] up to ±2.0 inches [±50mm]. 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 ½-20 mounting thread and the two locknuts supplied with each unit.

The ruggedness, long life cycle, and very high reliability of the GCD 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 GCD Series designs also require fewer parts and weld joints, thereby increasing overall structural integrity and reliability.

MEAS offers options, such as mating connector plugs, special contact tips (including AGD dial indicator tips), air-extend/spring retract, and cable assemblies. Also see our other models with built-in signal conditioning, **GCD-SE** (single-ended DC voltage), **GCT** (4-20mA 2-wire loop) and **GC-485** (RS-485 Digital Series), as well as the AC operated **GCA**.

Measurement Specialties, Inc. (NASDAQ MEAS) offers many other types of sensors and signal conditioners. Data sheets can be downloaded from our web site at: http://www.meas-spec.com/datasheets.aspx

*MEAS acquired Schaevitz Sensors and the **Schaevitz**® trademark in 2000.*

FEATURES

- All-welded stainless steel construction
- Resistant to harsh environments
- MS type connector (MIL-C-5015)
- Long cycle life
- CE compliant
- Calibration certificate supplied with each unit
- Air extend/spring retract available (Consult factory)

APPLICATIONS

- Factory automation
- Industrial printing equipment
- Steel mills
- Metal thickness gaging
- Environments requiring hermetically sealed transducers
- In-process measurements (feedback loop with PLC or CNC controller)

GCD Series Gage Heads

PERFORMANCE SPECIFICATIONS

ELECTRICAL SPECIFICATIONS						
Parameter	**GCD-050**	**GCD-125**	**GCD-250**	**GCD-500**	**GCD-1000**	**GCD-2000**
Stroke/gaging range	±0.050 [1.27]	±0.125 [3.17]	±0.25 [6.35]	±0.50 [12.7]	±1.0 [25.4]	±2.0 [50.8]
Sensitivity (volts/inch)	200	80	40	20	10	5
Input voltage	+/-15VDC					
Input current	30mA (maximum)					
Output at stroke ends	+/-10VDC					
Linearity (maximum band)	±0.25% FS (% of Full Scale)					
Repeatability	25 µ-inch [0.6 micron]					
Frequency response (dynamic)	15Hz (maximum)					
Electrical connector	6-pin MS type connector (MIL-C-5015)					

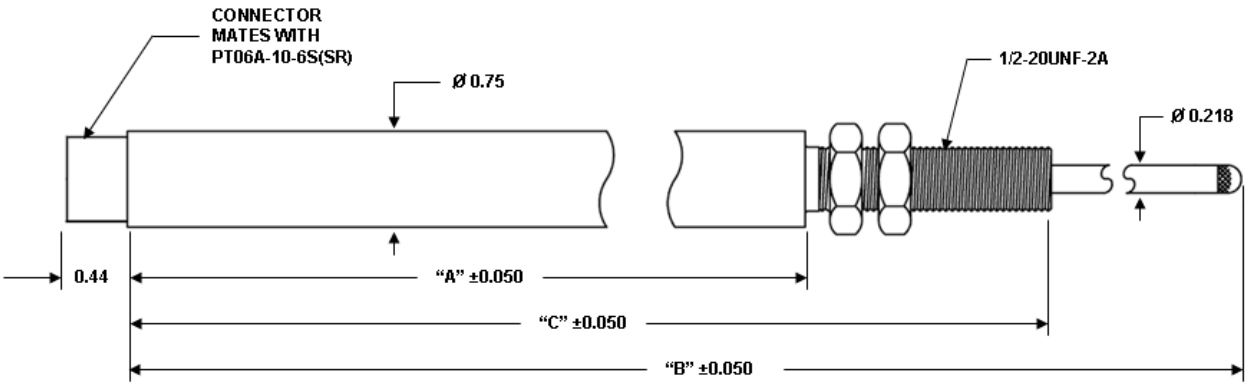
MECHANICAL SPECIFICATIONS						
Parameter	**GCD-050**	**GCD-125**	**GCD-250**	**GCD-500**	**GCD-1000**	**GCD-2000**
Stroke/gaging range	±0.050 [1.27]	±0.125 [3.17]	±0.25 [6.35]	±0.5 [12.7]	±1 [25.4]	±2 [50.8]
Pre-travel	0.24 [6.1]	0.27 [6.9]	0.05 [1.3]	0.20 [5.1]	0.07 [1.8]	0.10 [2.5]
Over-travel (minimum)	0.39 [9.90]	0.25 [6.4]	0.20 [5.1]	1.0 [25.4]	0.15 [3.81]	0.00 [0.0]
Main body length “A”	2.66 [67.6]	3.5 [88.9]	4.37 [111.0]	6.06 [153.9]	8.31 [211.1]	11.63 [295.4]
Overall body length “C”	4.02 [102.1]	4.87 [123.7]	5.74 [145.8]	9.05 [229.9]	11.29 [286.8]	17.12 [434.8]
Plunger length “B” (fully extended/”-10VDC side”)	5.08 [129.0]	5.90 [149.9]	6.77 [172.0]	11.53 [292.9]	13.76 [349.5]	21.67 [550.4]
Spring force (Ounce)	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
Spring force (Gram)	99 to 164 G	99 to 164 G	99 to 164 G	91 to 227 G	91 to 227 G	91 to 227 G
Weight (Ounce)	2.5 oz	3.3oz	3.5 oz	5.5 oz	8.0 oz	14.0 oz
Weight (Gram)	71 G	93 G	100 G	156 G	227 G	397 G

ENVIRONMENTAL SPECIFICATIONS	
Operating temperature	+32°F to +160°F [0°C to 70°C]
Survival temperature	-65°F to +200°F [-55°C to 95°C]
Shock survival	250 g (11ms half-sine)
Vibration tolerance	10 g up to 2KHz
Housing material	AISI 400 Series stainless steel
NEMA IEC 60529 rating	IP68 to 1,000 PSI [70 bars] with use of proper mating connector plug

Notes:
All values are nominal unless otherwise noted
Dimensions are in inch [mm] unless otherwise noted
FS: Full Scale is 2X for ±X stroke

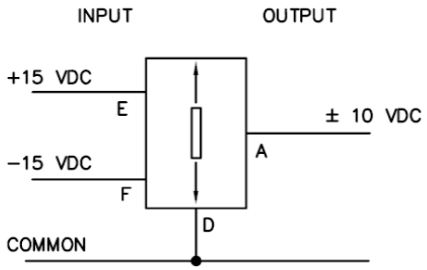
GCD Series Gage Heads

DIMENSIONS



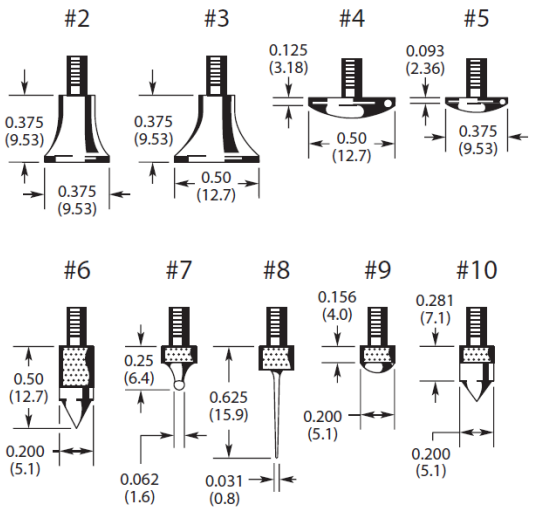
Dimensions are in inches
(Refer to mechanical specifications for dimensions "A", "B" and "C")

WIRING SCHEMATIC



A through F: Connector pin assignments

REPLACEMENT/OPTIONAL CONTACT TIPS



GCD Series Gage Heads

ORDERING INFORMATION

Description	Model	Part Number
±0.050 inch gage head	GCD-050	02350509-000
±0.125 inch gage head	GCD-125	02350510-000
±0.25 inch gage head	GCD-250	02350511-000
±0.5 inch gage head	GCD-500	02350512-000
±1 inch gage head	GCD-1000	02350513-000
±2 inch gage head	GCD-2000	02350159-000
10 foot shielded cable with wired mating connector *(consult factory for other longer cable lengths)*	GCD cable assembly	04290583-000
Mating connector kit	PT06A-10-6S(SR)	62101011-000
Also refer to our "Options and Accessories for Gage Heads" brochure.	Contact Tip 2	67010005-000
	Contact Tip 3	67010006-000
	Contact Tip 4	67010002-000
	Contact Tip 5	67010007-000
	Contact Tip 6	67010008-000
	Contact Tip 7	67010009-000
	Contact Tip 8	67010010-000
	Contact Tip 9	67010001-000
	Contact Tip 10	67010011-000

TECHNICAL CONTACT INFORMATION

NORTH AMERICA	EUROPE	ASIA
Measurement Specialties, Inc. 1000 Lucas Way Hampton, VA 23666 United States Phone: +1-800-745-8008 Fax: +1-757-766-4297 Email: sales@meas-spec.com Web: www.meas-spec.com	MEAS Deutschland GmbH Hauert 13 D-44227 Dortmund Germany Phone: +49-(0)231-9740-0 Fax: +49-(0)231-9740-20 Email: info.de@meas-spec.com Web: www.meas-spec.com	Measurement Specialties China Ltd. No. 26, Langshan Road High-tech Park (North) Nanshan District, Shenzhen 518057 China Phone: +86-755-33305088 Fax: +86-755-33305099 Email: info.cn@meas-spec.com Web: www.meas-spec.com