GCD-SE Series Gage Heads

- **Hermetically sealed housing**
- **Single ended 8.5 to 24VDC supply**
- **Low current consumption (only 6mA)**
- **Ideal for battery operation**
- **IEC IP68 rating to 1,000 PSI (70 bars)**
- **Long strokes up to 2 inches**
- **Hardened tool steel contact tip**
- **High side load resistance**

DESCRIPTION

The GCD-SE 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 single ended 8.5 to 28 VDC input with minimal current draw, the GCD-SE is ideally suited to portable measurement applications. Internal EMI, ESD and RFI protection, provide CE compliance when correctly installed. Synchronous demodulation ensures unsurpassed noise rejection.

These robust gage heads allow measurements over stroke ranges from +0.100" (+2.54mm) up to +2.0 inches (+50.8 mm). The maximum spring force is typically 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-SE 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-SE 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** (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

- Roller Gap Control
- In-process Wet Grinding
- Hand Held Gages
- X-Y Positional Feedback
- Automotive chassis track testing
- Remote site monitoring

GCD-SE Series Gage Heads

PERFORMANCE SPECIFICATIONS

ELECTRICAL SPECIFICATIONS					
Parameter	**GCD-SE-100**	**GCD-SE-250**	**GCD-SE-500**	**GCD-SE-1000**	**GCD-SE-2000**
Stroke/gaging range	0.10 [2.54]	0.25 [6.35]	0.50 [12.7]	1 [25.4]	2 [50.8]
Sensitivity (volts/inch)	50	20	10	5	2.5
Temperature coefficient of sensitivity	0.025%/°F (0.05%/°C) maximum				
Input voltage	+8.5 to +28VDC				
Input current	6mA				
Line regulation	0.2 mV/V				
Output voltage range	0 to +5VDC (4 wire hookup); +1 to +6VDC (3 wire hookup)				
Output Impedance	<1 Ohm				
Noise and ripple	<10mV RMS				
Linearity	±0.25% FS (% of Full Scale)				
Repeatability	25 µ-inch [0.6 micron]				
Stability	0.1% of Full Scale				
Frequency response (dynamic)	15Hz (maximum)				
Electrical connector	6-pin MS type connector (MIL-C-5015)				

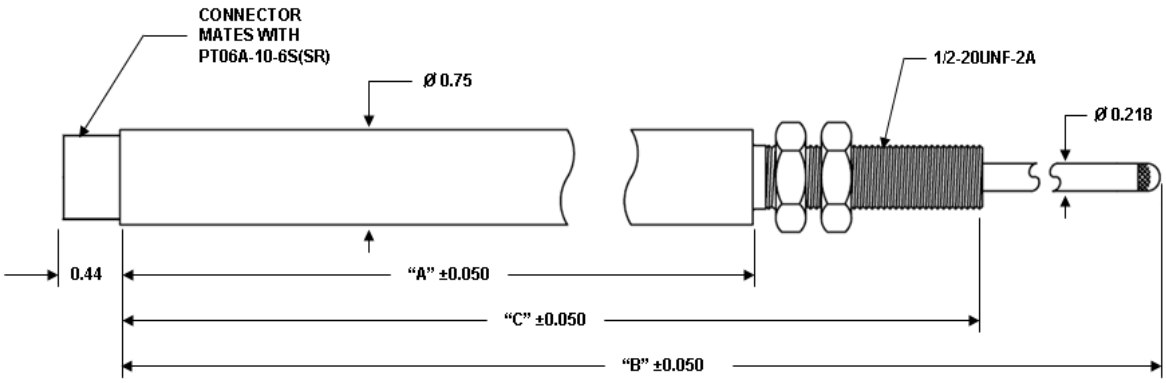
MECHANICAL SPECIFICATIONS					
Parameter	**GCD-SE-100**	**GCD-SE-250**	**GCD-SE-500**	**GCD-SE-1000**	**GCD-SE-2000**
Stroke/gaging range	0.10 [2.5]	0.25 [6.4]	0.50 [12.7]	1 [25.4]	2 [50.8]
Pre-travel	0.24 [6.1]	0.27 [6.9]	0.05 [1.3]	0.20 [5.1]	0.07 [1.8]
Over-travel (minimum)	0.39 [9.9]	0.25 [6.4]	0.20 [5.1]	1.0 [25.4]	0.15 [3.8]
Main body length “A”	2.66 [67.6]	3.5 [88.9]	4.37 [111.0]	6.06 [153.9]	8.31 [211.1]
Overall body length “C”	4.02 [102.1]	4.87 [123.7]	5.74 [145.8]	9.05 [229.9]	11.29 [286.8]
Plunger length “B” (fully extended; 0 or 1 VDC out)	5.08 [129.0]	5.90 [149.9]	6.77 [172.0]	11.53 [292.9]	13.76 [349.5]
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
Spring force (Gram)	99 to 164 G	99 to 164 G	99 to 164 G	91 to 227 G	91 to 227 G
Weight (Ounce)	2.5 oz	3.3 oz	3.5 oz	5.5 oz	8.0 oz
Weight (Gram)	71 G	93 G	100 G	156 G	227 G

ENVIRONMENTAL SPECIFICATIONS	
Operating temperature	-13°F to +185°F (-25°C to 85°C)
Survival temperature	-65°F to +250°F (-55°C to 125°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-SE Series Gage Heads

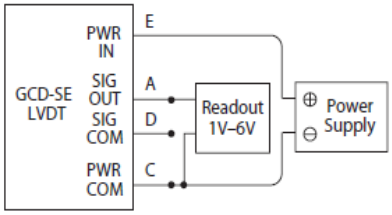
DIMENSIONS



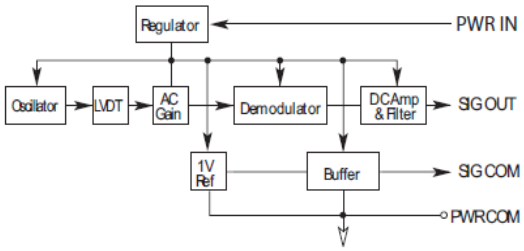
(Refer to mechanical specifications for dimensions "A", "B" and "C")

WIRING SCHEMATICS & BLOCK DIAGRAM

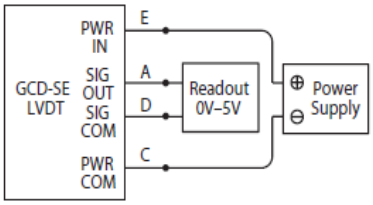
Important: NEVER connect Pins D and C together; NEVER connect Pin D to other GCD-SE's



3 Wire Hook-up for +1 to +6VDC out

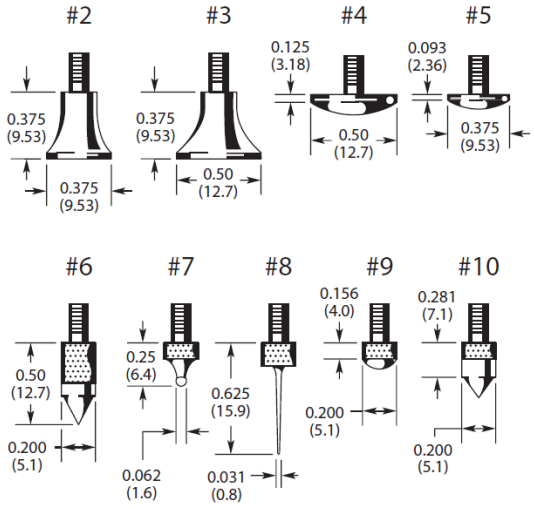


(A through E: Connector pin assignments)



4 Wire Hook-up for 0 to+5VDC out

REPLACEMENT/OPTIONAL CONTACT TIPS



GCD-SE Series Gage Heads

ORDERING INFORMATION

Description	Model	Part Number
0.10 inch gage head	GCD-SE-100	02351006-000
0.25 inch gage head	GCD-SE-250	02351007-000
0.5 inch gage head	GCD-SE-500	02351008-000
1 inch gage head	GCD-SE-1000	02351009-000
2 inch gage head	GCD-SE-2000	02351010-000
10 foot shielded cable with wired mating connector *(consult factory for longer cable lengths)*	GCD-SE cable assembly	04290589-000
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

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