GCD-SE

Schaevitz™ Precision Gage Head

- **Measurement Ranges from 0 … 2.54 mm to 0 … 50.8 mm**
- **Gage head**
- **Non-linearity 0.25 %**
- **Output signal 0 … 5 V, 1 … 6 V**
- **Supply voltage 8.5 … 28 VDC**

The GCD-SE Series of heavy-duty DC operated gage heads enable high performance in environments containing moisture, dirt, and fluid contaminants. With a spring loaded LVDT, a precision linear bearing, 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 in difficult environments. 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 to 0.100 inch [2.54mm] up to 0 to 2.0 inches [50.8 mm]. The maximum spring force is typically 8 oz [230 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.

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

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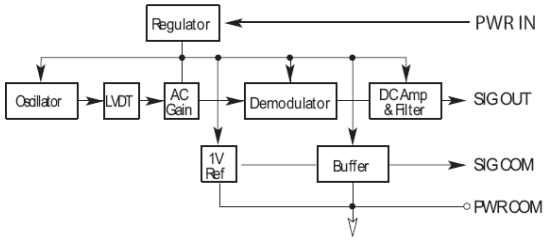
Specifications

Supply voltage:	+8.5 … +28 VDC
Input current:	6 mA
Line regulation:	0.2 mV/V
Operating temperature:	-25 … +85 °C
Storage temperature:	-55 … +125 °C
Output voltage:	0 … 5 V (4-wire) 1 … 6 V (3-wire)
Output impedance	<1 Ω
Noise and ripple:	<10 mV_{rms}
Non-linearity:	±0.25 % of FS maximum
Repeatability:	0.6 µm
Stability:	0.1 % of FS after warm up
Temperature coefficient of sensitivity:	0.05 % /K
Shock survival:	250 g (11 ms half-sine)
Vibration tolerance:	10 g up to 2 kHz
Housing material:	AISI 400 Series stainless steel
Electrical connector:	6-pin MS-style hermetic connector
Frequency response (dyn.)	15Hz maximum
NEMA IEC 60529 rating	IP68 to 1000 PSI [70 bars] with use of proper mating connector plug

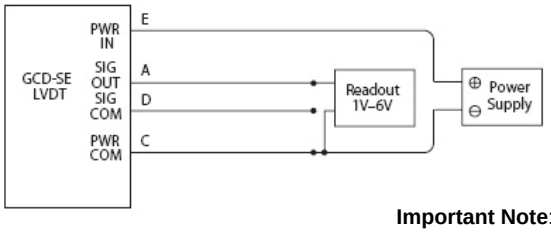
Notes:
All values are nominal unless otherwise noted

Block Diagram



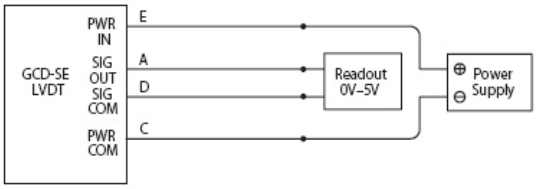
Wiring

3-wire hook-up



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

4-wire hook-up



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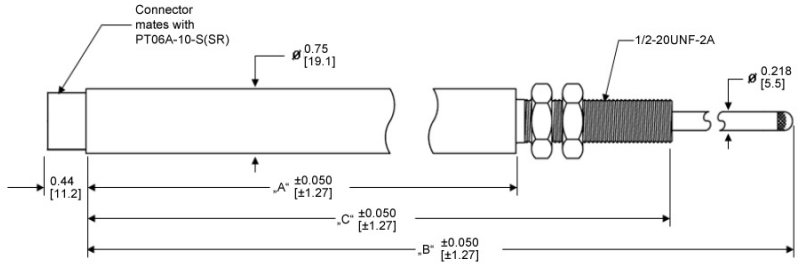
Mechanical Specifications



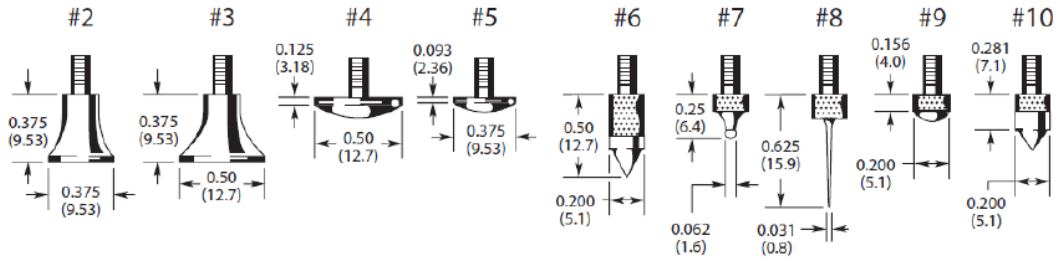
All dimensions in inches, values in brackets in mm, approx. values.

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

A: Main body length
B: Plunger length fully extended
C: Overall body length

Model number		GCD-SE-100	GCD-SE-250	GCD-SE-500	GDC-SE-1000	GDC-SE-2000
Stroke range	inch	0 … 0.10	0 … 0.25	0 … 0.50	0 … 1	0 … 2
	mm	0 … 2.54	0 … 6.35	0 … 12.7	0 … 25.4	0 … 50.8
Sensitivity	V/inch	50	20	10	5	2.5
	V/mm	2.0	0.8	0.4	0.2	0.1
Pretravel	inch	0.15	0.25	0.04	0.20	0.10
	mm	3.8	6.3	1.0	5.1	2.5
Overtravel, min	inch	0.30	0.30	0.25	0.35	0.10
	mm	7.6	7.6	6.3	8.9	2.5
A, approx.	inch	4.06	4.9	5.76	7.46	9.42
	mm	103.1	124.5	146.3	189.5	239.3
C, approx.	inch	5.42	6.27	7.13	10.45	12.41
	mm	137.7	159.3	181.1	265.4	315.2
B, approx.	inch	6.48	7.3	8.16	12.93	14.87
	mm	164.6	185.4	207.3	328.4	377.7
Weigth	oz	2.5	3.3	3.5	5.5	8.0
	g	71	93	100	156	227

Optional Contact Tips



Ordering Information

Specify the model name, followed by the desired gaging range suffix.

Example:
GCD-SE-100 is DC operated with a 0 … 2.54 mm range. Special contact tips are also available and can be ordered separately.

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

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