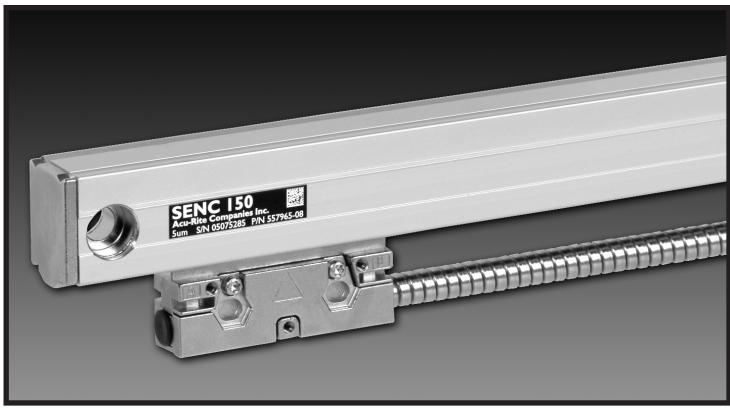
SENC 150

Precision Glass Scale

Acu-Rite Companies Inc.



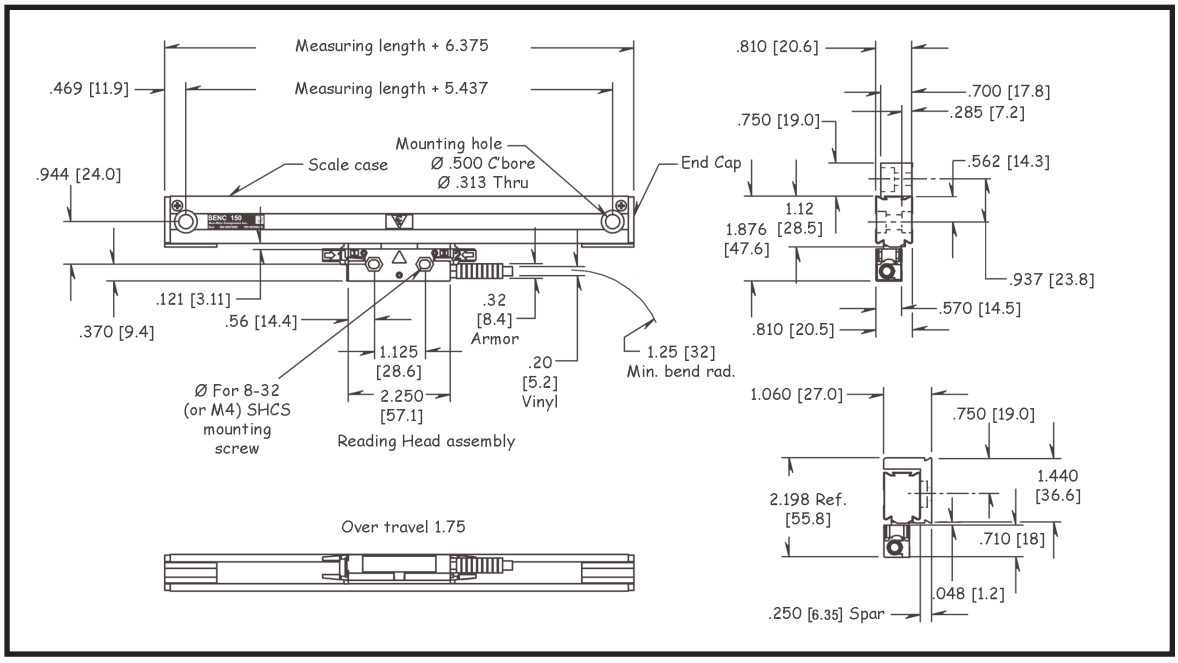
An **SENC 150** precision glass scale withstands the elements of contamination found in even the harshest environment. All **Acu-Rite Companies Inc.** precision glass scales incorporate **Acu-Rite Companies Inc.'s** long-standing tradition of quality, reliability, durability and dependability at an affordable price. The all new **SENC 150** incorporates the latest innovation in roller bearing technology for reduced backlash and greater scale travel life. The **SENC 150** also features a highly integrated scanning sensor that provides even greater contamination resistance. The **SENC 150** precision glass scale is designed to satisfy a wide range of application needs including, but not limited to, EDM's, grinders, lathes, milling machines and inspection equipment.

Features

- **Multiple resolutions - .00002" (0.5µm), .00005" (1µm) & .0002" (5µm).**
- **Exceptional Accuracy.**
- **Travel lengths from 2" (.05m) - 120" (3.04m).**
- **Armor or vinyl cable available.**
- **Flexible mounting features.**
- **Position-Trac™ - enables quick and easy workpiece zero-reset after power loss.**
- **3 Year HASSLE-FREE Warranty.**

Resolution	0.5µm (.00002")	1µm (.00005")	5µm (.0002")	Analog
Accuracy (at 20° C)				
µm, ±, in any 50mm (2")	1.5	1.5	3.0	1.5
µm, ±, in any 250mm (10")	3.0	3.0	4.0	2.5
µm, ±, in any 1000mm (40")	5.0	5.0	5.0	5.0

Optional ± 3µm / 1000mm available



SENC 150 assembly and mounting dimensions

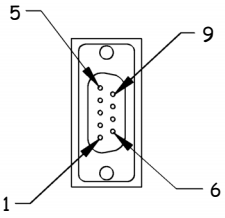
Electrical Specifications

Electrical Specifications	Digital		Analog
Light Source	LED (light-emitting diode)		
Operating voltage (VDC)	5.1 ± 0.1		5.0 ± 0.1
Operating current (Max. mA)	0.5, & 1 µm 220 mA	5 µm 180 mA	75
Output signals Incremental	Square-wave voltage signals channels A and B, in 90° quadrature relationship		Similar phasing, but differential sinusoidal current or voltage output
RM	One square-wave signal		Differential current or voltage output
Signal Levels	TTL-level		7-16 μA_{pp} or 1.0 V_{pp} (w/ 1K Ohm load)
RM	TTL-level		2-8 μA_{pp} or 1.2 V_{pp} (w/ 100K Ohm load)

Mechanical Specifications

Mechanical Specifications	Digital	Analog
Resolution (µm)	0.5, 1, & 5	
Grating pitch (µm)	20	
Scale medium	Reflective from nickel-coated glass	
Accuracy (@ 20° C) in any 1000mm	Refer to table on opposite page	
Max. slew speed (in/sec)	40	
Force required to move reading head (lbs.)	≤ 0.75	
Operating Environment Temperature Relative Humidity	0° to 50° C 20% to 95% (non-condensing)	
Storage Environment Temperature Humidity	-20° to 70° C 20% to 95% (non-condensing)	
Weight (lbs)	1.4 + 0.05/in of measuring length	
Connecting cable armored or vinyl	Length=5, 13, 19 ft. Connector: DE-9P	Length=5, 13, 19 ft. Connector: DE-9P
Max. cable length (ft)	35	70
Measuring lengths (in)	2- 120	
Reference mark interval	50mm fixed or Position-Trac™	
Protection (IEC 529)	IP53 when installed as per instructions IP64 with air purge	

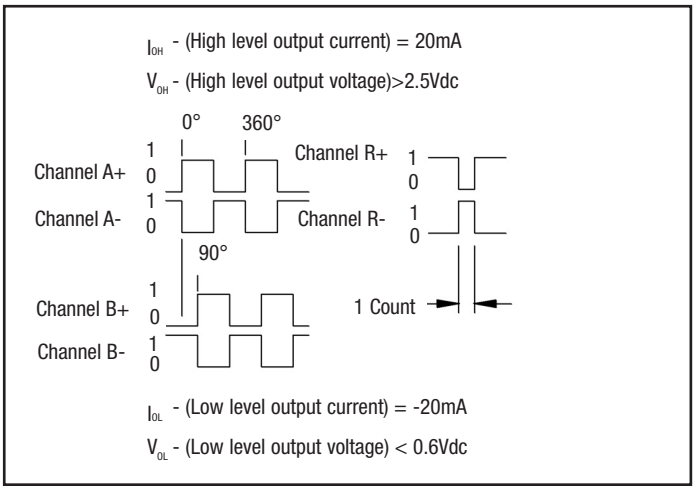
Options



Analog / Differential
Digital (DE) output
DE-9P

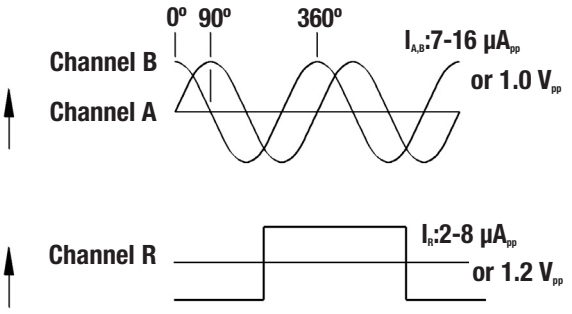
Digital pin-outs and output signals

DE Pin	Signal	DE Wire color
1	No Connect	
2	Channel A+	Green
3	Channel A-	Yellow
4	Channel B+	Blue
5	Channel B-	Red
6	Ground (power supply and signal return)	White
7	Supply Voltage	Brown
8	Channel R+ (+Reference Mark)	Pink
9	Channel R- (-Reference Mark)	Gray
Shell	Shield	



Analog pin-outs and output signals

Pin	Signal	Wire color
1	Ground	White
2	Channel A+	Green
3	Channel A-	Yellow
4	Channel B+	Blue
5	Channel B-	Red
6	N/C	
7	Supply Voltage	Brown
8	Channel R+ (+Reference mark)	Pink
9	Channel R- (-Reference mark)	Gray
Shell	Shield	



Position-Trac™ works by using a very precise distance-encrypted reference mark line pattern that's been placed onto each Acu-Rite Companies Inc. SENC 150 precision glass scale. Acu-Rite Companies Inc.'s readouts and controls then use proprietary software to decode the line pattern. This allows the operator to accurately reestablish workpiece zero from any position.