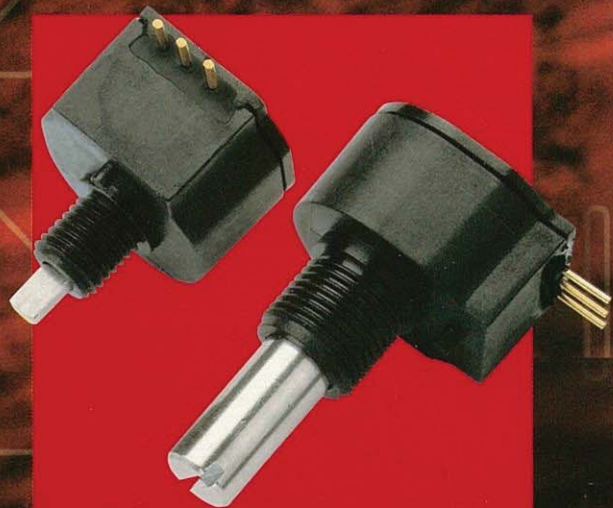


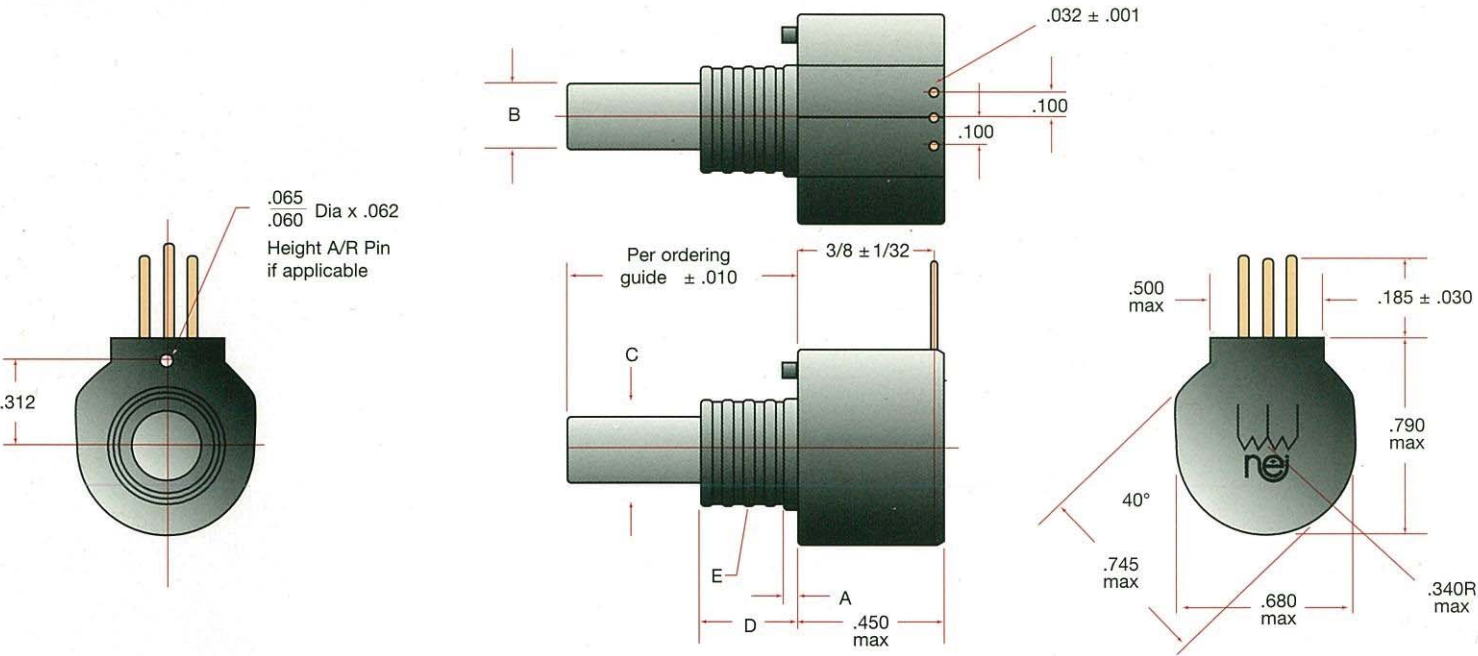
SensorCube™

Honeywell

Position Measurement Sensor
SC Series & MC Series

SPACE AGE SENSORS FOR DOWN TO EARTH NEEDS





DIMENSIONS IN INCHES

	A	B DIAMETER	C DIAMETER PILOT	D $\pm .010$	E
SC SERIES	.062	.2493/.2487	.406/.402	.375	3/8-32-2B UNEF
MC SERIES	.040	.1248/.1242	.312	.290	1/4-32-2B UNEF



SPACE AGE SENSORS FOR DOWN TO EARTH NEEDS

GENERAL DESCRIPTION

The SensorCube is an industrial grade potentiometric sensor designed to integrate internally to rotary motion systems, and to accurately and reliably provide position feedback for servo control. The sensing element is NEI's proprietary SensorPad, which combines long life and precision electrical performance. The SensorCube has been engineered with features most System Design Engineers are looking for, High Performance at Low Cost. The mechanical design is very rugged and robust, allowing the sensor to operate in high shock and vibration environments. The sealed design is resistant against aggressive media such as wave solder and PC board cleansing chemicals. The small and compact envelope allows for easy mounting and use. The electrical design allows for a wide variety of angle measuring ranges at high accuracies. The SensorCube is backed by proven technology. NEI is recognized as the world leader in position transducer technology by Fortune 100 companies in the automotive, military and aerospace marketplace. NEI sensors have performed in the most harsh and demanding environments including the Space Shuttle and other state-of-the-art missile and all-terrain vehicle applications. For over 30 years NEI has been a key provider of custom position sensing solutions.

FEATURES

- Small size
- Environmentally sealed (Both shaft and terminals)
- Long life cycling
- Rugged-robust design focusing on industrial applications
- Low cost
- High accuracy
- Excellent repeatability
- High operational speed
- Can be specified with a variety of angle measuring ranges
- High amplitude low noise output signal
- Precision electrical tolerances
- Operating temperatures from -55° C up to +125°
- Simple analog output
- Low power consumption
- Meets wave solder and PC board wash requirements

FUNCTIONAL SPECIFICATIONS

Apply over the operating temperature, 50% humidity and +10 VDC reference voltage unless otherwise specified.

DESCRIPTION	VALUE	UNITS
ELECTRICAL PARAMETERS		
Independent Linearity	2	%
Output Noise	0.25	%
Effective Sensing Angle	See Ordering Guide	
Resolution	Virtually Infinite	N/A
Resistance (See Table)	500 to 50k	Ohms
Resistance Tolerance	±10	%
Power Rating @ 70C	1	Watts
Derated linearly to 0 Watts @ 125C		
Dielectric Withstanding Voltage	1000	Volts RMS
Insulation Resistance (500 VDC)	1000	Megohms
MECHANICAL PARAMETERS		
Mounting Type	Bushing	N/A
Mechanical Angle	See Ordering Guide	
Torque (Starting & Running): SC (MAX)	1.5	oz-in
MC (MAX)	1	oz-in
Stop Strength (Min)	4	in-lb
Shaft Mechanical Loading Limits		
Radial Load	10	lb
Axial Load	20	lb
Shaft Play (Max)		
Radial	0.005	in
End	0.010	in
Shaft Runout (Max)	0.002	in
ENVIRONMENTAL PARAMETERS		
Storage Temperature	-65 to +125	Degrees C
Operating Temperature	-55 to +125	Degrees C
Life Cycling		
Full Stroke	10,000,000	Cycles
Dither ±1" @60 Hz	50,000,000	Cycles
Mechanical Shock	100	G's
Mechanical Vibration		
10-2,000 Hz	15	G's RMS
Moisture Resistance		
Immersion (SC only)	up to 5	PSI DP
Humidity (95%)	<10% Change	Resistance
Salt Spray		
5% Solution	96	Hours

Position Measurement Sensor SC Series & MC Series

ORDERING INFORMATION

SC	1	N	A	1	A	502	—
							Custom Designs/ "Specials"
							See Technical Notes Section below
							Total Resistance (Nominal) (See Table)
							Linearity A: 2% Independent
							1: (Anti Rotation) A/R Pin STD.
							2: NO A/R Pin
							3: A/R Pin (Special)
							Shaft Extension
							A: 7/8 Plain
							B: 7/8 Flatted
							C: 7/8 Slotted
							X: Special
							D: 3/4 Plain
							E: 3/4 Flatted
							F: 3/4 Slotted
							N: NO Detent - 310° Mech. Angle STD.
							C: NO Detent - Continuous Mech. Angle
							L: Special
							Electrical Angle (±5°)
							1: 300°
							2: 270°
							3: 240°
							4: 180°
							5: 120°
							6: Special
							Type: SC= SensorCube
							MC= Mini SensorCube

TECHNICAL NOTES

Electrical Angle: Special Options 50° to 300°

Detent: Center Detent, or CCW Detent (3-8 oz. in. torque)

Mechanical Angle: 150° to 310° with no Detent, or
180° to 310° Center Detent
150° to 310° Counter Clockwise Detent

Torque (non-sealed design) 0.3oz. in. max

Resistance: 500Ω to 50KΩ Range standard. Dependent on Angle (See Table)

Shaft Extension: 1/2 to 1 15/16 - Plain, Slotted, Flatted

A/R Pin: Non Standard Configuration or Location

Miscellaneous: Terminal Style or Length - Leadwire or Connector Assembly -
303 Stainless steel shaft standard - Valox 420 Housing Standard

* Custom Designs/ "Specials" are designated by adding "W" for SC style and "X" for MC style and an NEI assigned 3 digit suffix to the part number.

ANGLE	RESISTANCE (OHMS)						
	500	1K	2K	5K	10K	20K	50K
300°	n/a	n/a	n/a	502	103	203	503
270°	n/a	n/a	202	502	103	203	503
240°	n/a	102	202	502	103	203	503
180°	501	102	202	502	103	203	n/a
120°	501	102	202	502	103	n/a	n/a

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