

9960 Series Hall Effect Rotary Position Sensor

BEI Sensors



BEI Sensors' Model 9960 Hall effect rotary position sensors are available in numerous standard configurations with fast, one week delivery. Available configurations include 7 termination options, single or dual outputs and 24 active electrical angles. With 360 degree turn capability, the 9960 can be used over a large range of rotary motion making it extremely versatile.

Packaged in a highly sealed (IP69K) housing and utilizing non-contacting Hall effect technology makes the 9960 an exceptionally rugged and reliable sensor. Model 9960 is ideal for a variety of applications in harsh environments, including steering and pedal positioning for construction, agriculture and mining vehicles, marine steering and speed control, wheel and throttle position for material handling equipment, and valve position for process control.

Product shown with flying lead. Multiple termination options available. See ordering options.

Mechanical Specifications

Mechanical Travel: continuous 360 degree and option for 180 degree mechanical stops
Operating Torque: 0.11 N-m maximum
Weight: 80 g (w/ 6" cable)
Mounting: 38mm mounting center
Drive: blade
Termination: Flying leads, wire harness w/connector or integral connector (see ordering options)

Electrical Specifications

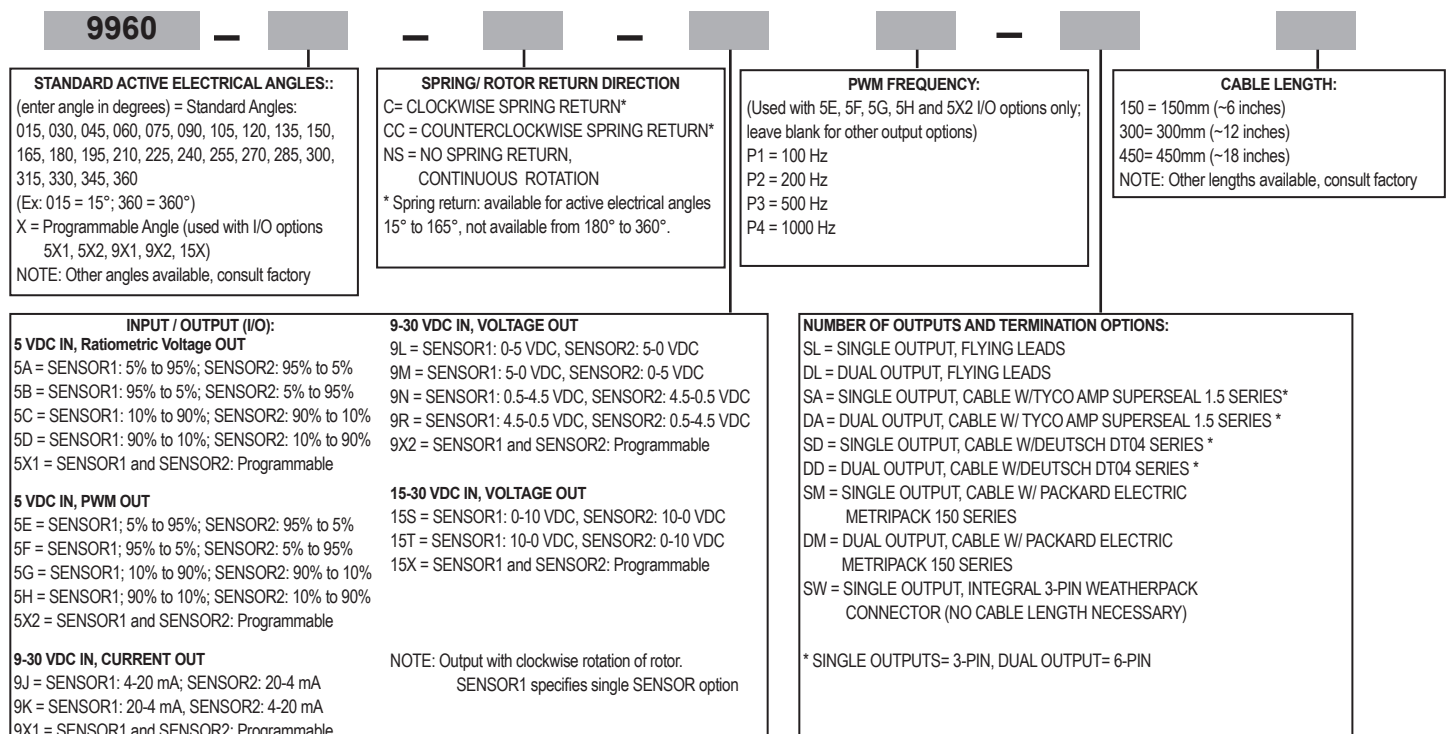
Active Electrical Angle: 15-360° in 15° increments
Input Voltage: 5VDC +/-5%, 9-30VDC or 15-30VDC
Input Current: (per channel)
 16mA maximum except for Current Loop option at 36mA max
Overvoltage: 5V Input: 20VDC
 9-30V Input: 70V per ISO 7637-2
Output Signal:
 Analog: 1) ratiometric 5% to 95% or 10% to 90%
 2) non-ratiometric 0-10VDC, 0-5VDC, 0.5-4.5VDC
 PWM: duty cycle 5% to 95% or 10% to 90%
 Current: 4-20 mA (3-wire)
Minimum Load Resistance: 10kOhm resistive
Resolution: 0.088 degrees (12-bit)
Accuracy: +/-0.6% of Active Electrical Angle

Environmental Specifications

Sealing: IP67, IP69K
Side Load: 1kg (1 million cycles)
Vibration: 10G peak, 10-2000 Hz
Shock: 50Gs, half sine pulse, 11 m sec duration
EMC: 200 V/m
External Magnetic Susceptibility: 20G
Operating Temperature: -40°C to +125°C
 4-20mA versions 9J, 9K, & 9X1: -40°C to 85°C
Storage Temperature: -55°C to +150°C

9960 Series Ordering Options for assistance, call 800.350.2727

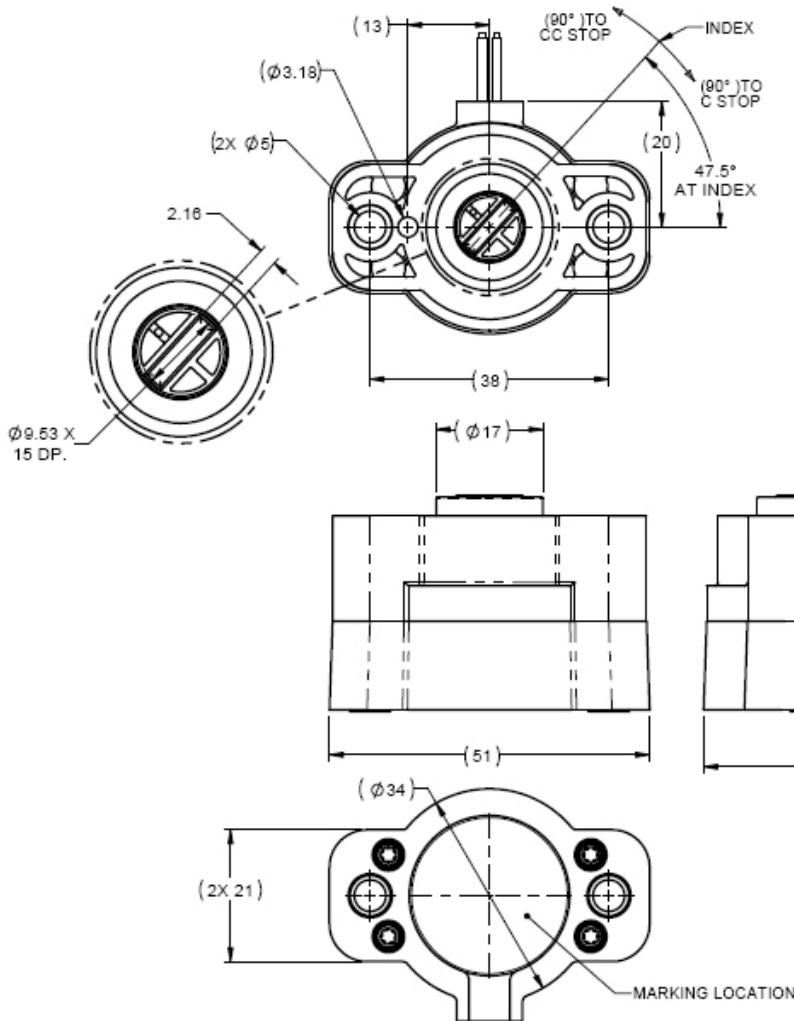
Use this diagram, working from left to right to construct your model number (example: 9960-015-C-5EP1-SL150)



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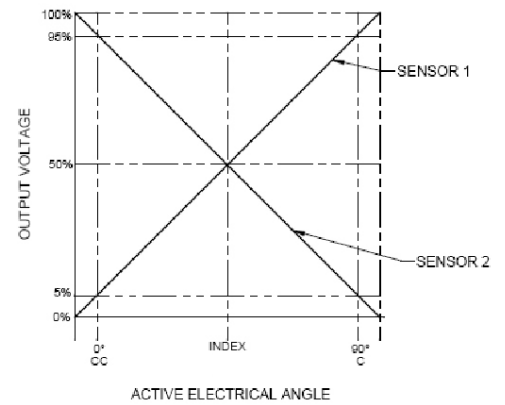
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Dimensions



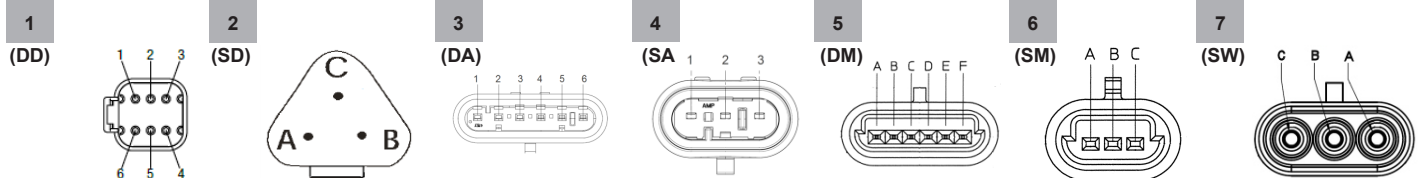
Output Example

(Option 5A with 90° electrical angle shown)



Pin Out Drawings

Dimensions in mm



Connector Pin Out

Dwg 1	Dwg 2	Dwg 3	Dwg 4	Dwg 5	Dwg 6	Dwg 7	Flying Lead	Flying Lead		
Pin Number							3-Wire	6-Wire	Wire Color	Function
1	A	1	1	E	A	A	•	•	Brown	GND 1
2	B	2	2	F	B	C	•	•	Red	Supply Voltage 1
3	C	3	3	C	C	B	•	•	Orange	Sensor 1 Output
4		4		A				•	Green	Ground 2
5		5		B				•	Blue	Supply Voltage
6		6		D				•	Yellow	Sensor 2 Output

Connector Part Numbers and Mates

Dwg	Connector	Mates to
1	Deutsch: DT04-6P	DT06-6S
2	Deutsch: DT04-3P	DT06-3S
3	Amp Superseal: 1.5;282108-1	282090-1
4	Amp Superseal: 1.5;282105-1	282087-1
5	Packard Electric Metripack 150.2	12162210
6	Packard Electric Metripack 150.2	12162182
7	Packard Electric Weather Pack	12015793