BEI Sensors Model 9970 Hall Effect rotary position sensor is available in two standard output configurations (0-5 V ratiometric or 4-20 mA) for ease of specification and use. Both versions use a standard Amp, Superseal three terminal connector and are available with 12 active angle ranges, 30 degrees up to 360 degrees (in 30 degree increments) in a single output device. Unlike comparable sensors the 9970 can use the full 360 degree travel range making it extremely versatile.

Packaged in a well-sealed, IP67 and IP69K package and using non-contacting Hall Effect technology ensures an exceptionally rugged and reliable sensor. The Model 9970 is ideal for such harsh environments as steering and pedal position for off highway construction and agricultural vehicles as well as mining, marine and material handling equipment. It is also suitable for valve position indication or control in processing applications.

### Mechanical Specifications
- **Range:** Continuous up to 360 degrees
- **Mounting:** 50mm mounting centers
- **Shaft:** 6mm shaft with flat and 2mm cross-drilled hole
- **Termination:** Three terminal AMP Superseal Connector
- **Housing:** Glass Filled PBT
- **Life:** 35 M cycles

### Electrical Specifications
- **Active Electrical Angle:** 30 (+/- 15) degrees through 360 (+/- 180) degrees in 30 degree increments. Other angles available, consult factory.
- **Input Voltage:** 5VDC +/- 5% or 9-30 VDC
- **Overvoltage Protection:** Yes
- **Reverse Polarity Protection:** Yes
- **Short Circuit Protection:** Yes
- **Output Signal:** Voltage: Ratiometric 10% to 90%
  Current: 4 – 20 mA (uses 9-30 VDC input)
- **Resolution:** 12 bits
- **Accuracy:** +/-0.6% of active electrical angle
- **EMC:** 200V/m ISO 11452-3 & EN61000-4-20
- **ESD:** 8kV per ISO 10605

### Environmental Specifications
- **Sealing:** IP67 and IP69K per DIN 40050-9
- **Vibration:** 10g rms 20 – 2000 Hz
- **Humidity:** 95% RH @ 40° C
- **Liquid Exposure:** Salt water, cola, motor oil, ethylene glycol, paint, diesel fuel
- **RoHS:** Yes
- **Operating Temperature:** -40°C to +125°C
- **Storage Temperature:** -40°C to +125°C

### 9970 Series Ordering Options
For assistance, call 800.350.2727

Use this diagram, working from left to right to construct your model number

```
9970 - XXX - 5A - SA 424A06AXXX RPNSX0XXC1A11X
9970 - XXX - 9J - SA 424A02AXXX RPNSX0XXD1A21X
```

### Cross Over Table

<table>
<thead>
<tr>
<th>BEI SENSORS</th>
<th>ELOBAU</th>
<th>HONEYWELL</th>
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<tr>
<td>9970 - XXX - 5A - SA</td>
<td>424A06AXXX</td>
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</tbody>
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9970 Hall Effect Sensor

Dimensions

<table>
<thead>
<tr>
<th>Connector Pin Out</th>
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<tbody>
<tr>
<td>PIN</td>
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</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
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</table>

Output Examples

These commodities, technology or software if exported from the United States must be in accordance with the Bureau of Industry, and Security, Export Administration regulations. Diversion contrary to U.S. law is prohibited.