The BEI Sensors 9900 Series offers a non-contacting Hall effect sensor in a rugged design, ideally suited for tight packaging constraints while providing superior reliability and durability. Unlike most similar products, the 9900 provide the full redundancy of two independent Hall detectors in a common package (single output sensors also available). Each Hall detector is rigidly supported to meet the severe durability requirements of demanding applications as automotive and off-highway. Rotating sintered magnets enable the stationary detectors to perform with improved accuracy and reliability, including excellent temperature stability and corrosion resistance. One-time factory programmability allows for greater flexibility in design and custom outputs.

Fully sealed, (meeting and/or exceeding IP66/IP67 standards) the 9900 is impervious to contamination and moisture. An integrally molded, 6-pin connector makes a sealed connection with industry standard Packard Electric connectors.

9900 Series Features:

Rotating magnet/Fixed sensor configuration
Provides improved accuracy and reliability

Two independent outputs for redundancy
Full redundancy assures back-up safety

Fully programmable
Outputs; offset, gain, slope and temperature compensation

Sintered Alnico-8 magnets
Provide excellent temperature stability and corrosion resistance

Ratiometric Output
Factory programming through connector
After completion of assembly provides high accuracy

Sealed construction
IP66/IP67, 6-pin I/O Interface to Packard Electric Connector

Extended temperature range
-40° to +150°C available optionally

Return spring (CW standard, CCW optional)
Eliminates mechanical backlash

Extended operating life
35 million operational cycles

Ordering Information:

9900 X XXX XX

Temperature Rating:
Blank = Standard 85C, HT = 125C

Spring Return:
CW = Clockwise, CCW = Counter
Clockwise, NS = No Spring Return

Electrical Angle:
ie. 090 = ±45°, 120 = ±60°

Number of Sensors:
1 = Single Output, 2 = Dual Output

SAMPLE: 9902 090 CW

Standard 85C
CW = Clockwise Spring Return
90° (±45°) Electrical Angle
Dual Output

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ISO9001 Certified/ QS9000 Registered
Dual Output Hall Effect Sensor
9900 Series

Connector mates with Packard Electric METRI-Pack 150.2 series (pull-to-seat 6 pin sealed connector assemblies) (i.e. 12162261, 12162260 or 12162210)

Shaft flat is shown with:
- sensor 1 output at 50% Vs (input voltage).
- sensor 2 output at 25% Vs (input voltage).

**Mechanical Specifications**
- Mechanical Travel: -90° to +90° (180° total rotation)
- Frequency Response: 1,000Hz minimum
- Rotational Torque: 0.025 – 0.110 N-m
- Weight: 35 grams (approx.)

**Electrical Specifications**
- Mechanical Input Range: -45° to +45° (other angles available)
- Input Voltage: 5.0 V ±0.25V DC
- Input Current: 10mA maximum per output
  20mA maximum total
- Sensor 1 Output: 0.5V - 4.5V
- Sensor 2 Output: 0.25V – 2.25V
  (Different output voltage range for sensor outputs available as a custom option)
- Accuracy: ±2.0% of full scale at room temperature
  ±3.0% of full scale over operating temperature range
- Resolution: Analog (continuous)

**Environmental Specifications**
- Electromagnetic Compatibility: 100V/meter, 14kHz – 1GHz range
- Vibration: 10G peak, 20 – 2,000 Hz
- Shock: 50Gs, half sine pulse, 5 m sec duration
- Side Load: 1kg for 1 million cycles
- Operating temperature range: -40°C to +85°C
  (wider operating temperature -40° to +150°C available as a custom option)
- Storage temperature range: -55°C to +105°C  (-55°C to +165°C)

Specifications subject to change without notice.  BE2023