The 9850 Gen II Series offers a highly reliable rotary potentiometer sensor module that can be easily integrated into a wide variety of space-conscious applications requiring installation simplicity, long service life and repeatable accuracy. The 9850 Gen II Series introduces a new, lower profile (15.2mm; maximum connector receptacle height 25.9mm), designed to perform in demanding environments.

Manufactured for optimal cost-economies, the 9850 Gen II Series offers simple yet durable design strengths that can lead to significant systems cost savings. Plug-in simplicity and sealed connector contact is assured via an integral right-angle connector receptacle designed to accept industry-standard Packard Electric METRI-Pack™ connectors. This design also eliminates weak/stress points and leaks in exposure to water.

Twelve standard models offer a choice of 180° or 120° mechanical rotation with round or slotted mounting holes for optimal installation alignment.

### Electrical Specifications
- **Active Electrical Rotation:** 85° or 130° Single Output (See Fig. 1)
- **85° Dual Output**
- **Total Resistance:** 5,000 ohms ±20%
- **Linearity:**
  - Std. ±2.0% over active electrical rotation (See Fig. 1)
  - (Independent) Spec. ±0.5% over active electrical rotation
- **Power Rating At 70°C:** 0.15 Watts

### Mechanical Specifications
- **Mechanical Rotation (Nominal):**
  - Single: 120°–180°
  - Dual: 120°
- **Shaft Rotation/Direction:** (See Table A)
- **Mechanical Life:** 3,000,000 full cycles
  - 5,000,000 dither cycles
- **Stop Strength:** 0.68 N·m max.
- **Torque:** 0.11 N·m max.
- **Mounting Torque:** 1.35 N·m max.

### Environmental Specifications
- **Temperature Limits:** -40°C to +125°C
- **Vibration:** 15 Gs, 50 to 1,000 Hz
- **Humidity:** 95% @ 40°C
- **Shock:** 50 Gs max.

### Options Available:
- Integrated switch functions, user-specific electrical/mechanical rotation, mounting hole inserts, resistance and linearies.
- Integrates Duncan’s Proprietary Thick Film Element & Precious Metal Contact Technology with Maximum Packaging Flexibility

### Generation II Benefits:
- Dual-output offers the added functionality of two sensors in a single sensor
- Sealed integral interface accepts industry-standard Packard Electric METRI-Pack™ connectors
- Low-profile design answers space-conscious applications
- Additional mechanical rotation angles available

#### 3-Pin (Single Output)
- **CW (clockwise)**
- **CCW (counter clockwise)**

#### 6-Pin (Dual Output)
- **CW**
- **CCW**

ISO 9001 Certified/QS9000 Compliant
9850 G en II Series
Low-Profile Precision Rotary Sensor Modules

Models 9851-9858 - Single Output (3-Pin)

Models 9861-9864 - Dual Output (6-Pin)

Table A

<table>
<thead>
<tr>
<th>Model</th>
<th>Mechanical Rotation</th>
<th>Active Electrical Rotation</th>
<th>Rotation Direction</th>
<th>Mounting Hole</th>
</tr>
</thead>
<tbody>
<tr>
<td>9851</td>
<td>120°</td>
<td>85°</td>
<td>CW</td>
<td>S</td>
</tr>
<tr>
<td>9852</td>
<td>120°</td>
<td>85°</td>
<td>CCW</td>
<td>S</td>
</tr>
<tr>
<td>9853</td>
<td>120°</td>
<td>85°</td>
<td>CW</td>
<td>R</td>
</tr>
<tr>
<td>9854</td>
<td>120°</td>
<td>85°</td>
<td>CCW</td>
<td>R</td>
</tr>
<tr>
<td>9855</td>
<td>180°</td>
<td>130°</td>
<td>CW</td>
<td>S</td>
</tr>
<tr>
<td>9856</td>
<td>180°</td>
<td>130°</td>
<td>CCW</td>
<td>S</td>
</tr>
<tr>
<td>9857</td>
<td>180°</td>
<td>130°</td>
<td>CW</td>
<td>R</td>
</tr>
<tr>
<td>9858</td>
<td>180°</td>
<td>130°</td>
<td>CCW</td>
<td>R</td>
</tr>
</tbody>
</table>

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email: sales@beiduncan.com
www.beiduncan.com

Ordering Information

Example: 9855 R5K L20 specifies a model 9855 (180° mechanical rotation, CW rotation direction) single output, 3-Pin Sensor Module with slotted mounting hole, standard resistance 5K ohms ±20%, Linearity ±5%.

Mating Connector/Interface Information:
Sensor mates with Packard Electric METRI-Pack™ Series 150 Connectors

†Spring Return: CW Sensors return contact to CCW end
CCW Sensors return contact to CW end

Mounting Hole style: S = Slotted, R = Round

Table A

<table>
<thead>
<tr>
<th>Model</th>
<th>Mechanical Rotation</th>
<th>Active Electrical Rotation</th>
<th>Rotation Rotation Direction</th>
<th>Mounting Hole</th>
</tr>
</thead>
<tbody>
<tr>
<td>9861</td>
<td>120°</td>
<td>85°</td>
<td>CW</td>
<td>S</td>
</tr>
<tr>
<td>9862</td>
<td>120°</td>
<td>85°</td>
<td>CCW</td>
<td>S</td>
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<tr>
<td>9863</td>
<td>120°</td>
<td>85°</td>
<td>CW</td>
<td>R</td>
</tr>
<tr>
<td>9864</td>
<td>120°</td>
<td>85°</td>
<td>CCW</td>
<td>R</td>
</tr>
</tbody>
</table>

Single Output (3-pin) Dual Output (6-pin)

†Mounting Hole style: S = Slotted, R = Round

Example: 9855 R5K L20 specifies a model 9855 (180° mechanical rotation, CW rotation direction) single output, 3-Pin Sensor Module with slotted mounting hole, standard resistance 5K ohms ±20%, Linearity ±5%.

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