

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 costs 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): 120°-180° single; 120° dual
(See Table A)

Shaft Rotation/Direction: (See Table A)

Mechanical Life: 1,000,000 full cycles
5,000,000 dither cycles

Stop Strength: 0.68 Nm max.

Torque: 0.11 Nm max.

Mounting Torque: 1.35 Nm 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:

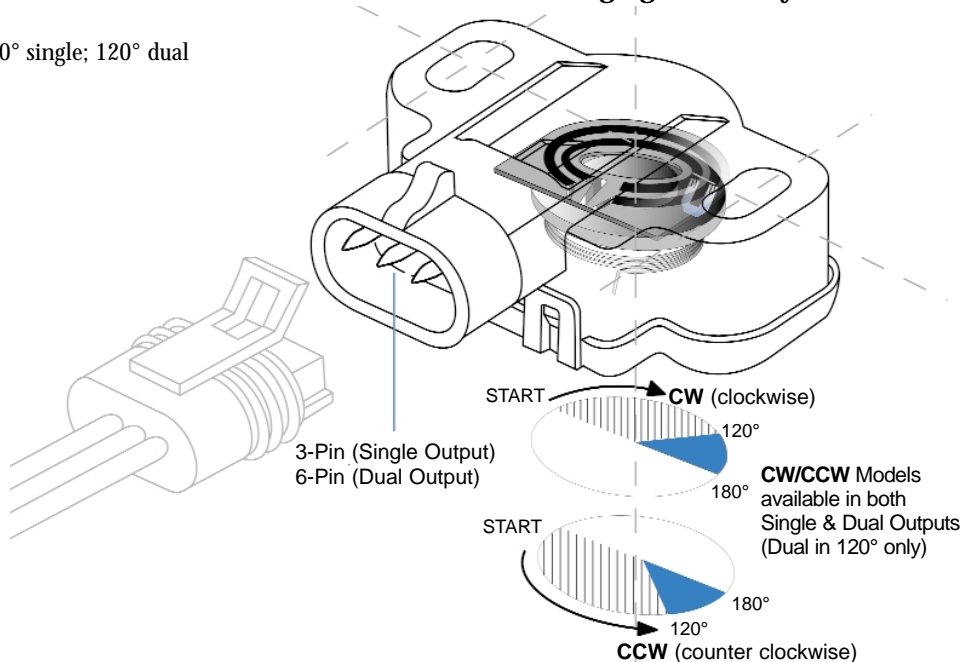
Integrated switch functions, user-specific electrical/mechanical rotation, mounting hole inserts, resistance and linearities.



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

Integrates Duncan's Proprietary Thick Film Element & Precious Metal Contact Technology with Maximum Packaging Flexibility



9850 Gen II Series Low-Profile Precision Rotary Sensor Modules



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



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



Table A

| Model | Mechanical Rotation | Active Electrical Rotation | Rotation* Direction | Mounting ¹ Hole |
|-------|---------------------|----------------------------|---------------------|----------------------------|
| 9851 | 120° | 85° | CW | S |
| 9852 | 120° | 85° | CCW | S |
| 9853 | 120° | 85° | CW | R |
| 9854 | 120° | 85° | CCW | R |
| 9855 | 180° | 130° | CW | S |
| 9856 | 180° | 130° | CCW | S |
| 9857 | 180° | 130° | CW | R |
| 9858 | 180° | 130° | CCW | R |

| Model | Mechanical Rotation | Active Electrical Rotation | Rotation* Direction | Mounting ¹ Hole |
|-------|---------------------|----------------------------|---------------------|----------------------------|
| 9861 | 120° | 85° | CW | S |
| 9862 | 120° | 85° | CCW | S |
| 9863 | 120° | 85° | CW | R |
| 9864 | 120° | 85° | CCW | R |

Single Output (3-pin)



Dual Output (6-pin)



*Spring-Return: CW Sensors return contact to CCW end
CCW Sensors return contact to CW end

¹Mounting Hole style: S = Slotted, R = Round



Note: For rotation outside active electrical rotation, linearity may exceed specified tolerances.

Fig. 1

Mating Connector/Interface Information:

Sensor mates with Packard Electric METRI-Pack™ Series 150 Connectors

Ordering Information

98XX
Model No.
(See Table A)

R5K
Standard
Resistance

L2.0
Standard
Linearity (%)

Example: 9855 R5K L2.0 specifies a model 9855 (180° mechanical rotation, CW rotation direction) single output, 3-Pin Sensor Module with slotted mounting holes, standard resistance 5K ohms ±20%, Linearity ±2%.

Specifications subject to change without notice. Printed in U.S.A. BE0018-9850GII-1001
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