

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:

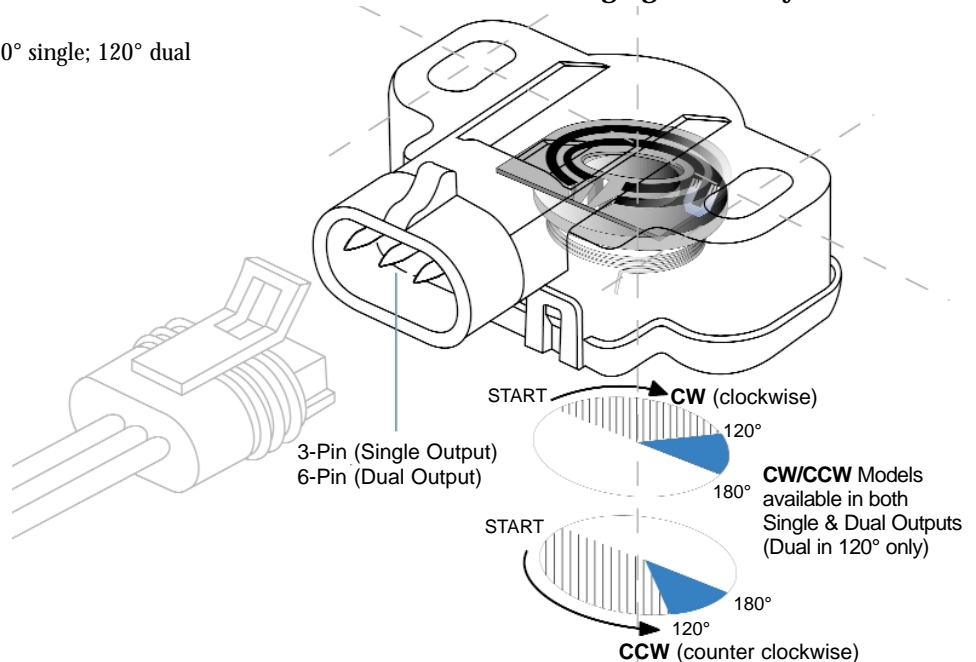
Integrated switch functions, user-specific electrical/mechanical rotation, mounting hole inserts, resistance and linearities.



## 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 <sup>1</sup> 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 <sup>1</sup> 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)

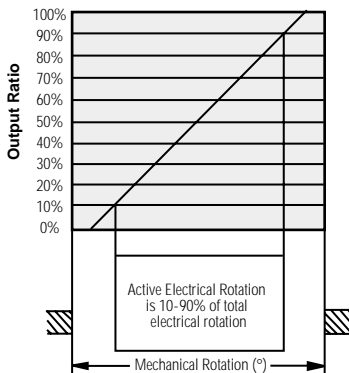


Dual Output (6-pin)



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

<sup>1</sup>Mounting 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  
Trademarks are the property of their respective companies.



Tel: 805-968-0782 / 800-350-2727 | Fax: 805-968-3154 / 800-960-2726  
7230 Hollister Ave., Goleta, CA 93117-2807 | [www.beisensors.com](http://www.beisensors.com)

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.