

# Ring Sensor Data Sheet

## Features and Benefits

- Rugged design - Over 1M touch activations over entire sensor area with no degradation observed.
- Measures position along a circular path
- Easy to integrate

## Description



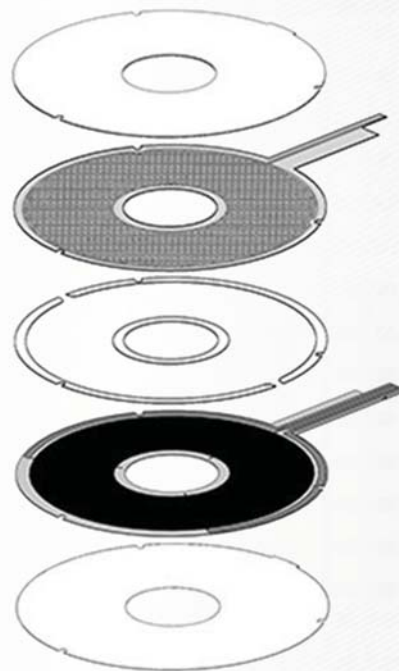
The Ring Sensor is Interlink's solution for capturing position in compact applications. The sensor's tough, moisture resistant surface can be used with a finger, stylus, or glove; even in harsh environments.

The Ring Sensor simplifies input design, saves critical room, and helps save battery life. A battery operated demo is available.

Call us or visit our website for more information.

Rotary Membrane Potentiometer

## Sensor Construction



Ring Sensor (Rotary Membrane Potentiometer) is constructed of several layers:

- A protective graphic layer with adhesive
- A top conductive mesh sense layer
- A membrane switch spacer layer
- A linear resistive ink layer
- A bottom adhesive layer



P/N: 94-00031 Rev. B

Embrace the Power of Sensor Technologies

Rotary Membrane Potentiometer

## Device Characteristics

Actuation Force	0.2N min
Position Resolution	Continuous (analog)
Non-Actuated Resistance	>10 MΩ
Long Term Drift	No measurable change
Operating Temperature	Sensor is functional before, during, and after the following conditions:
Cold	-20°C for 48 hrs
Hot	50°C for 48 hrs
Hot Humid	50°C 85%RH for 48 hrs
Hot Extended	70°C 85%RH for 48 hrs
Storage Temperature	Sensor is functional before and after the following conditions
Cold	-35°C for 4 hrs
Hot	+85°C for 4 hrs
Hot Humid	+85°C 95%RH for 4 hrs
Tap Durability	Functional after 2M taps of 500g
Cycle Test	Functional after 1M strokes at 245g
Standing Load Durability	Functional after 24 hrs of 50N loading
Chemical Resistance	Graphic layer surface resistant to most common cleaners and spills for 24 hours. These include: water, soap, bleach, alcohol, ammonia NH <sub>4</sub> OH based window cleaner, acetic acid CH <sub>3</sub> COOH based cleaner, cola, coffee with sugar and cream.
Linearity	Measurable to +/- 3° of touch position
EMI	Generates no EMI
ESD	Not ESD sensitive
UL	All materials UL grade 94V-1 or better
RoHS	Compliant

Rotary Membrane Potentiometer

**Connector Information**

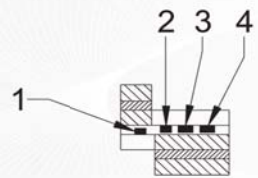
Recommended tail connector:  
JST 4-pin SMT connector  
(JST PN# 04FM-1.0SP-1.9TF),  
or equivalent.

**Application Information**

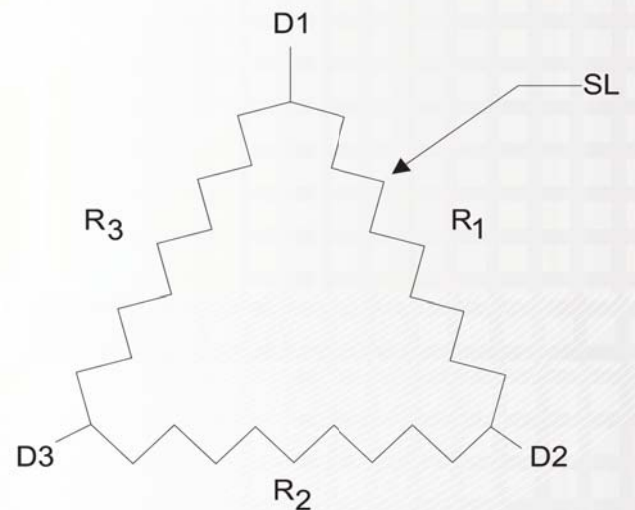
The Interlink Electronics Ring Sensor can measure position along the circular sensor path. The connection to the measuring microprocessor is very simple and requires only a few external components. For a detailed explanation on how to connect and program the Ring Sensor, see the Ring Sensor Integration Guide.



PINOUT	
PIN #	REF
1	SENSE LINE (SL)
2	DRIVE LINE 1 (D1)
3	DRIVE LINE 2 (D2)
4	DRIVE LINE 3 (D3)



**PIN-OUT**



Additional application and integration details are found in the Ring Sensor Integration Guide, which is downloadable from [www.interlinkelectronics.com/Support](http://www.interlinkelectronics.com/Support)

Rotary Membrane Potentiometer

**Orderable Part Numbers**

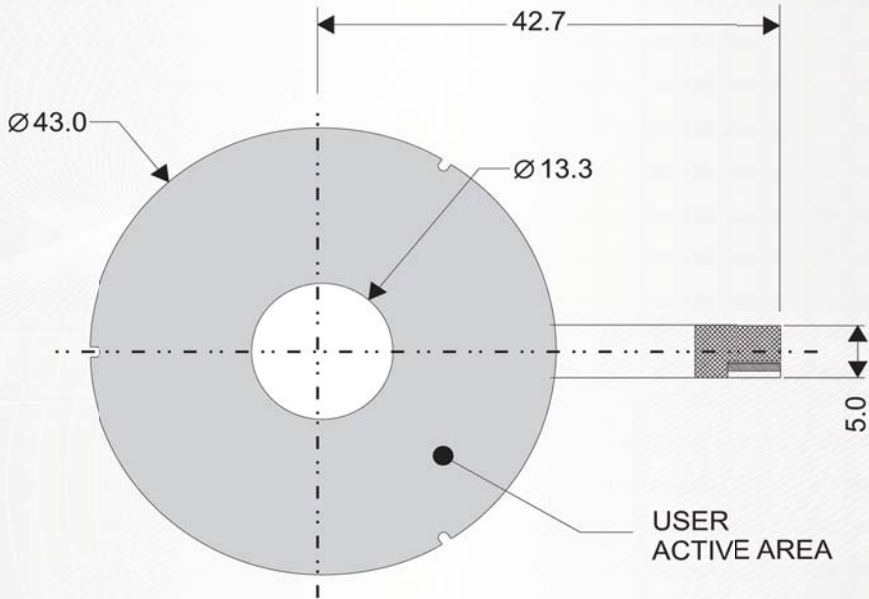
**Hardware Development Kit, 54-00024**

This hardware development kit includes:

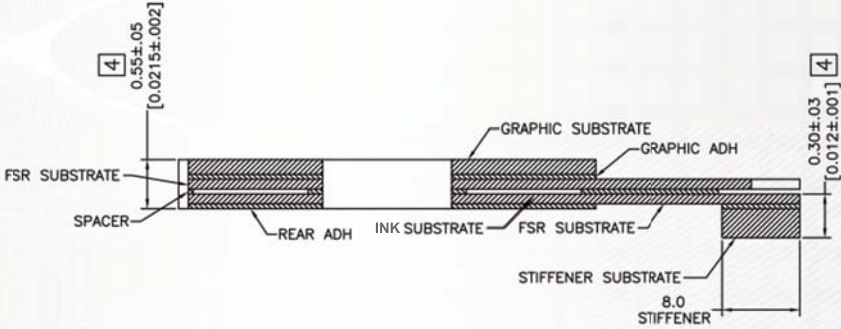
- Ring Sensor Demo Board (Qty. 1)
- Ring Sensor (Qty. 10)
- 4 Pin Connector (Qty. 5)
- USB Flash drive with product literature (Qty. 1)

**Ring Sensor 40-24131**

**Sensor Mechanical Data**



**Cross Section Diagram**



LAYER STACK-UP

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