

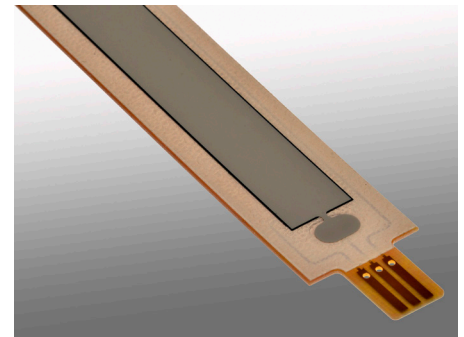
DATASHEET

Sensofoil® FR4-HYBRID

Resistive track printed on circuit board

Features:

- Linear design
- Operating temperature -25 °C to +85 °C
- No “dent-effect”
- Particularly robust



How does it work? Sensfoil® FR4-Hybrid

A Sensfoil® membrane potentiometer FR4-Hybrid consists of a resistive track printed onto a circuit board and a collector track printed onto the top PET foil layer. These layers are separated by a so-called spacer. Only when the layers connect through mechanical pressure using a wiper a signal is produced.

The special feature of the Hybrid version is the additionally integrated flexible metal strip, ensuring that the upper foil always returns to its original form after being exposed to long lasting pressure at high temperatures. This integrated Hybrid technology provides broader application opportunities due to the increased operating temperature range.

Ideally, a low DC voltage is connected to the resistive track and tapped at the collector track in the form of a voltage divider. A linear relation exists between the length of the resistive track, or the angle of the resistive track for rotary sensors, and the applied voltage. At 50% of distance traveled, 50% of the applied voltage is measured.

Quality characteristics of the Sensfoil® membrane potentiometers are resistance values, their corresponding tolerances and the non-linearity. The non-linearity represents the actual deviation of the output signal to an ideal reference line and is expressed as a percentage of the applied supply voltage.

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Sensofoil® FR4-HYBRID

Part Numbers (standard portfolio)

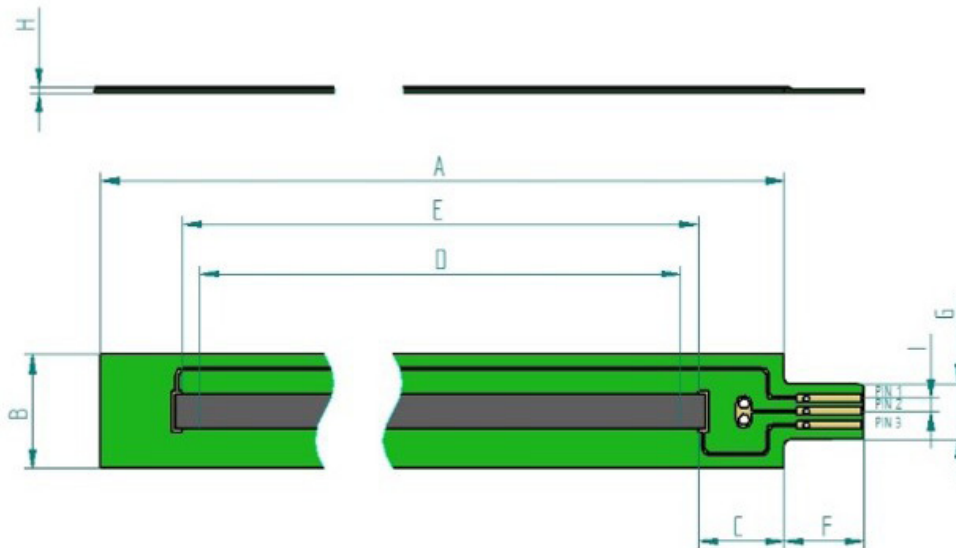
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Mechanical Data (at room temperature) ⁽¹⁾

Total length	A	137 mm			
Total width	B		22 mm		
Beginning of effective electrical length	C		16 mm		
Effective electrical length ⁽²⁾	D	95 mm			
Active length	E	105 mm			
Length connector tail	F		15 mm		
Width connector tail	G		10.5 mm		
Height	H		0.9 mm		
Contact Spacing	I		2.54 mm		
Travel speed			≤ 3 m/s		
Life cycles (tested to date)			500,000 cycles		
Mounting type			self-adhesive foil		

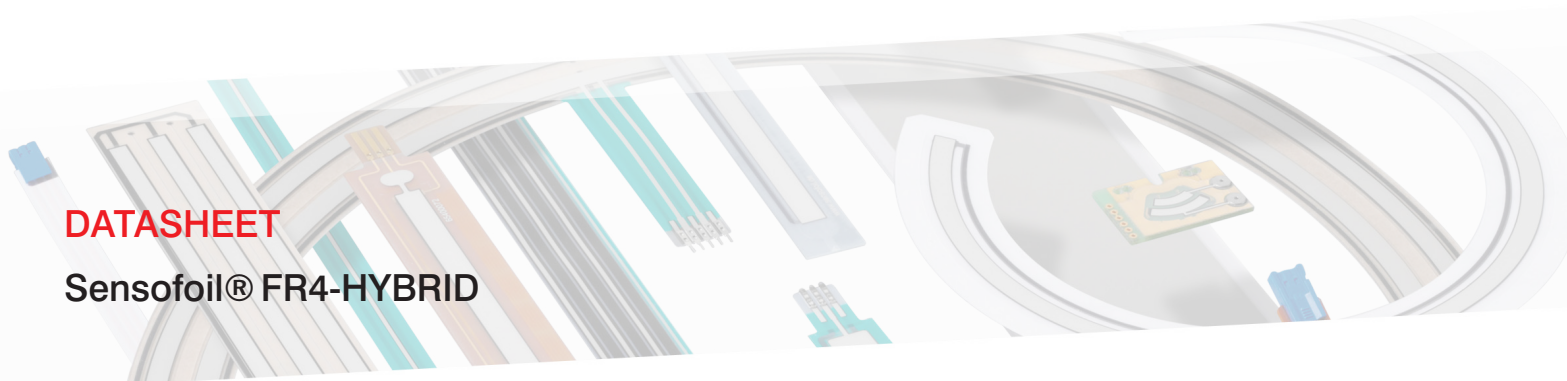
Above values are based on internal tests and inspections and represent typical values.
Hoffmann + Krippner does not guarantee completeness or absolute accuracy based on varying conditions.
Test set up information and conditions can be obtained.

- (1) Tolerances based on DIN ISO 2768
- (2) Area in which the specified linearity is guaranteed. Approx. 90% of the total active length.



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Part Numbers (standard portfolio)

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Environmental Conditions

Operating temperature	-25°C to +85°C
Storage temperature	-25°C to +85°C
Protection Class ⁽³⁾	IP 54

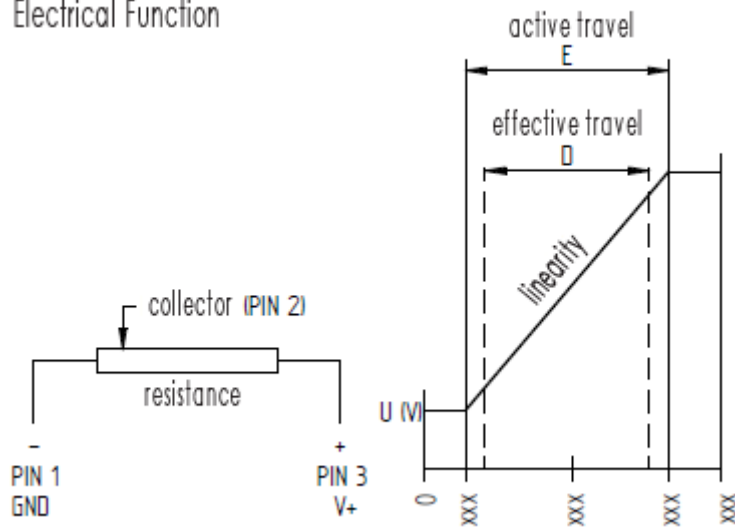
Electrical Data (at room temperature)

Resistance	10.0 kOhm
Tolerance	+/- 30%
Independent linearity	2%
max. wiper current in case of failure	0.1A
suggested wiper current during operation	0.1µA
Operating voltage	1-42 VDC

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(3) Protection class for sensor ONLY.

Electrical Function



DATASHEET**Sensofoil® FR4-HYBRID****Sensofoil® FR4-Hybrid Accessories**

Wiper for membrane potentiometers with integrated hybrid technology
(datasheet available upon request)



Wiper H+K part number 60300002 (M6x1 thread)



Wiper H+K part number 60300007 (for mounting)

Contacts for membrane potentiometers with circuit board
(datasheets available upon request)

- All common contacts solderable
- SMD contacts
- Cables or stranded wire soldered directly

Other connector and soldering options available upon request.