

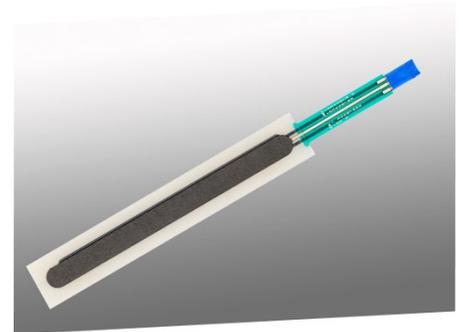
## DATASHEET

### Sensofoil® PET-MAGNET

#### Resistive track printed on PET foil

Features:

- Linear design
- Contactless operation
- Operating temperature 0 °C to +55 °C
- Up to 20 million life cycles



#### How does it work? Sensofoil® PET-Magnet

A Sensofoil® membrane potentiometer PET-Magnet consists of a resistive track printed onto the bottom PET foil layer 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.

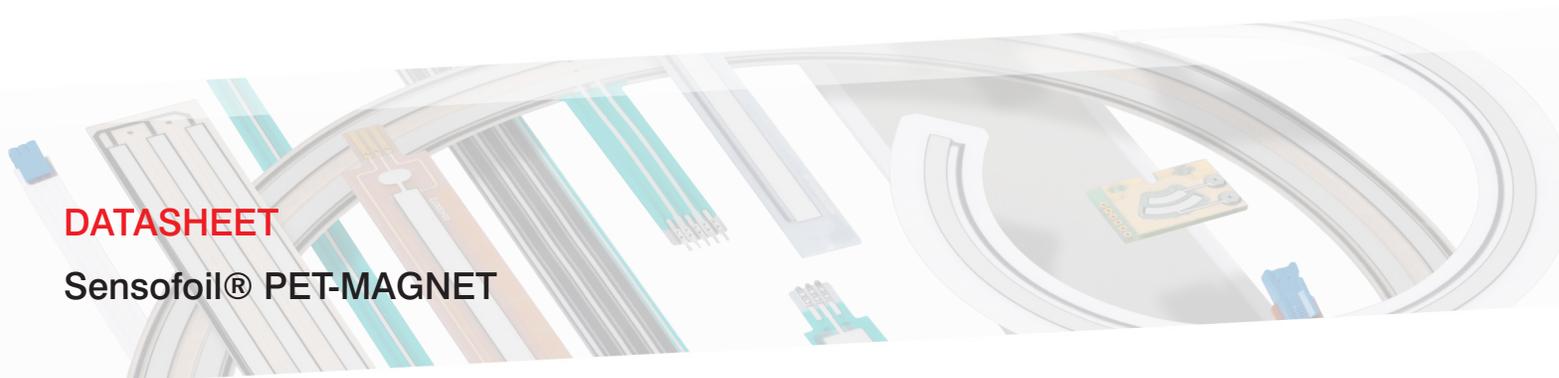
For contactless operation, an additional layer is added using a ferromagnetic material. This ferromagnetic strip is pulled by a magnet, pressing the collector foil against the resistive track, therefore creating a contact. With the correct dimensions, linear paths and angles can be measured contactless, even through enclosures.

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 Sensofoil® 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® PET-MAGNET**



**Part Numbers (standard portfolio)**

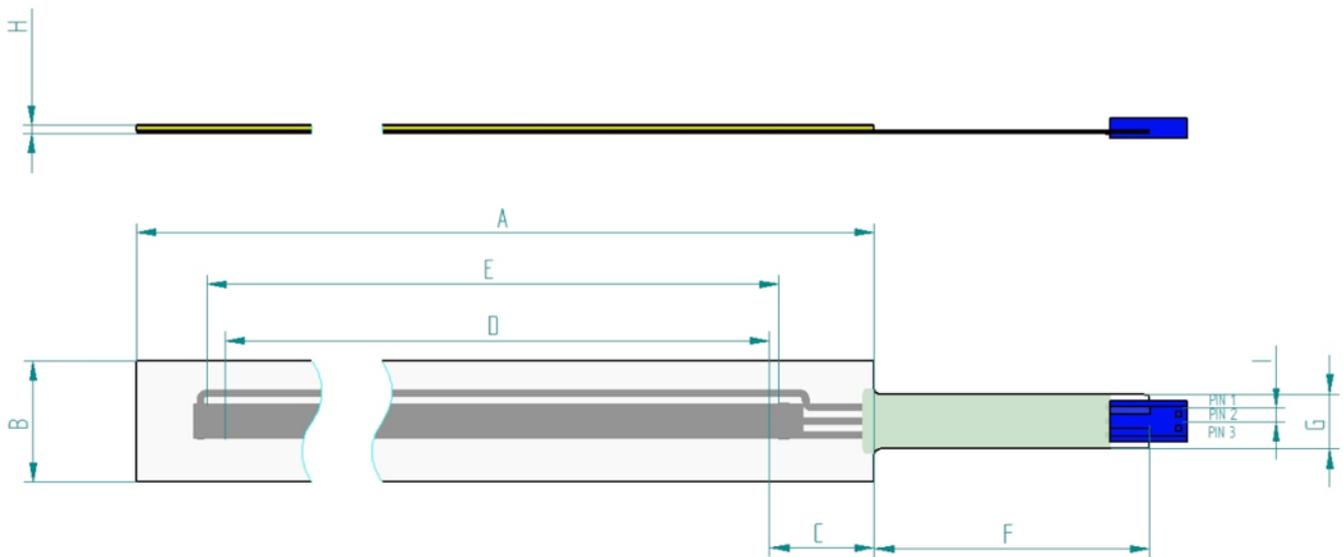
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**Mechanical Data** (at room temperature) <sup>(1)</sup>

Total length	A	123 mm	335 mm	535 mm
Total width	B	22 mm		
Beginning of effective electrical length	C	9 mm	15 mm	15 mm
Effective electrical length <sup>(2)</sup>	D	100 mm	300 mm	500 mm
Active length	E	105 mm	305 mm	505 mm
Length connector tail	F	50 mm		
Width connector tail	G	10.5 mm		
Height	H	1.6 mm		
Contact Spacing	I	2.54 mm		
Travel speed		≤ 3 m/s		
Life cycles (tested to date)		20 Million cycles		
Mounting type		self-adhesive foil		

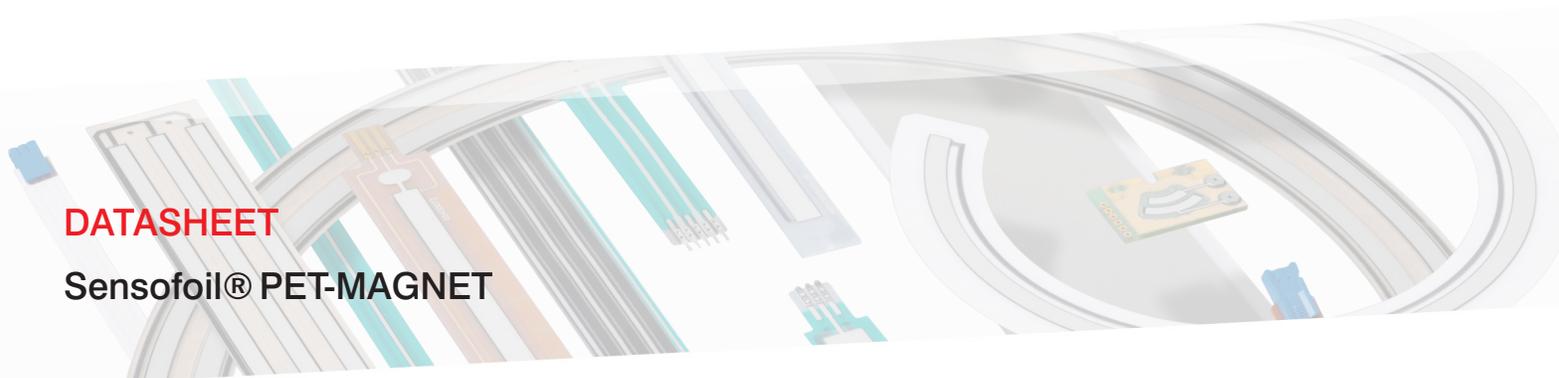
Above values are based on internal tests and inspections and represent typical values.  
 Hoffmann + Krippner does not guarantee completeness or absolute accuracy based on varying conditions.  
 Test set up information and conditions can be obtained.

- (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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**Environmental Conditions**

Operating temperature	0°C to +55°C
Storage temperature	-25°C to +85°C
Protection Class <sup>(3)</sup>	IP 54

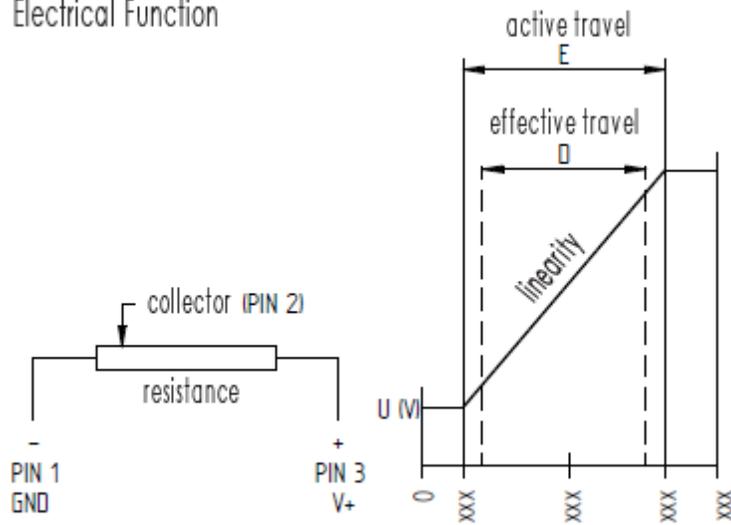
**Electrical Data (at room temperature)**

Resistance	2.5 kOhm	8.0 kOhm	12.7 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



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**Sensofoil® PET-Magnet Accessories**

Magnet for Sensofoil® PET-Magnet  
(datasheet available upon request)



Magnet H+K part number 60300004 (D44-N52 Neodymium Magnet)

Contacts for membrane potentiometers with PET surface  
(datasheets available upon request)



3-pin Duflex (standard)  
female



for ZIF connector, 3-pin, con-  
tacts covered with graphite,  
grid: 1mm



3-pin Crimpflex  
female



3-pin Crimpflex, solder pins  
without housing



3-pin Crimpflex  
female, locking

Other connector and soldering options available upon request.