

# PISeca OEM Position Sensor

CAPACITIVE SINGLE- ELECTRODE SENSOR AND SIGNAL CONDITIONER



## E-852KOEM

- + System solution for PISeca capacitive position sensors
- + Cost- efficient for OEM applications
- + 20  $\mu\text{m}$  measurement range and 3 kHz bandwidth
- + ILS circuitry optimizes capacitive sensor linearity

### PISeca capacitive sensor and signal conditioner

Single- electrode sensor with excellent position resolution and OEM electronics with fixed measurement range and bandwidth. Minimum noise, excellent long- term stability. Synchronization for multiple channel measurement

### Measurement principle

Direct, contactless measurement of actual position (direct metrology). Use of electric field for measuring the change of capacitance between the probe and a conductive target surface without physical contact. Thanks to this contactless, frictionless measurement there is no wear or hysteresis and a high phase fidelity is achieved

### Customer- specific application of sensor, bandwidth and measurement range

The E-852KOEM can be offered in similar design with any D-510 PISeca sensor. The measurement range is between 20 and 500  $\mu\text{m}$ , depending on the measurement range of the selected PISeca sensor. Bandwidth options: For highest accuracy and low- noise measurement with sub- nanometer resolution, it can be limited to 10 Hz; for high- dynamics applications with a resolution in the 1 nm range, it is 10 kHz maximum

### Integrated linearization system (ILS) for highest accuracy

The ILS compensates the influences of parallelism errors between sensor and measurement surface and guarantees an excellent measuring linearity, with an error below 1 %

### Fields of application

Semiconductor technology / semiconductor industry, data storage, automotive industry, metrology, precision machining

## Specifications

	E-852KOEM	Unit
Function	PISeca single- electrode capacitive sensor and signal conditioner, OEM module	
Channels	1	
<b>Sensor</b>		
Sensor type	D-510.021	
Measurement range*	20	$\mu\text{m}$
Min. gap	10	$\mu\text{m}$
Max. gap	150	$\mu\text{m}$
Sensor active diameter	3.8	mm
Sensor active area	11.2	$\text{mm}^2$
Sensor bandwidth	3 / 10 / 1.1 / 0.3 / 0.1 / 0.01 (optional)	
Ext. synchronization	Master- Slave	
Temperature stability	< 2	mV/ K
<b>Electrical properties</b>		
Output voltage	-10 to 10 -5 to 5 / 0 to 10 (optional)	V
Output signal	1 k $\Omega$ / 1 nF	
Supply voltage	$\pm 15$ V / 100 mA	
Dynamic resolution	<0.002 of measurement range (RMS)	%

Linearity error	<1	%
<b>Interface and operation</b>		
Sensor connection	LEMO ECP.00.650.NLL.543 socket, triaxial	
Signal output	Sub- D, 9- pin	
Linearization	ILS	
<b>Miscellaneous</b>		
Operating temperature range	Sensor: -20 to 100 Electronics: 5 to 40	°C
Mass	Sensor: 8 Electronics: 111	g
Length of sensor cable	2	
Dimensions	Sensor: Ø 8 × 30 Electronics: 55 × 102 × 20 incl. mounting flanges	mm
Target ground connector	Banana jack, 4 mm	

\* Optional extension factors: 2 / 2.5 / 5  
Ask about custom designs!

## Order Information

### E-852KOEM

PISeca Single- Electrode Capacitive Sensor Probe, 8 mm Diameter, 20 µm Nominal Range, Sensor Cable PISeca, 2 m and Signal Conditioner Electronics for Single Electrode Capacitive Sensors, 1 Channel, OEM Module

Ask about custom designs!

## Related Products

[D-510 PISeca Capacitive Sensors](#)

[E-852 PISeca Signal Conditioner](#)

