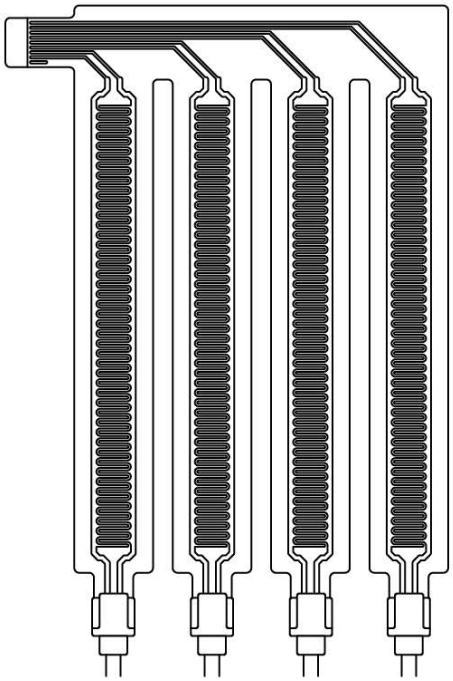
tacterion

plyon® flex DevKit Sensor Module

Technical Data Sheet for plyon® flex sensors of the current generation delivered with the plyon® flex Development Kit

Physical Properties



Property	Value	Unit
Sensor generation:	Zebra	
Module dimensions:	85 x 140 | 3.35 x 5.51	mm | in
Size of tactile elements:	9 x 90 | 0.35 x 3.54	mm | in
No. of tactile elements:	4	
Sensor thickness:	1.00 | 0.04	mm | in
Minimal detectable force[1]:	0.3	N
Measurement range[1]:	0.3 – 10	N
Surface materials:	Silicone Elastomer PET	
Measurement principles:	Resistive (force) Capacitive[2] (proximity, touch)	
Electrical termination:	1 x Exposed flex tail – 9 Pos. / 0.5 mm 4 x FFC Connector – 2 Pos. / 2.54 mm	
Material compatibility:	Typical material compatibility of PET films and silicones needs to be considered.	

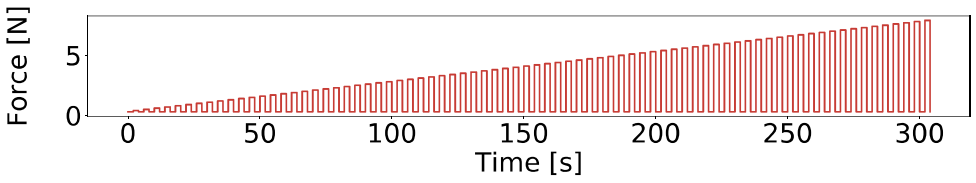
[1] Typical values for a circular test tool with an actuation area of 0.5 cm^2.
Dependent on several factors such as actuator geometry and readout electronics.
[2] Capacitive characteristics not shown in this data sheet.

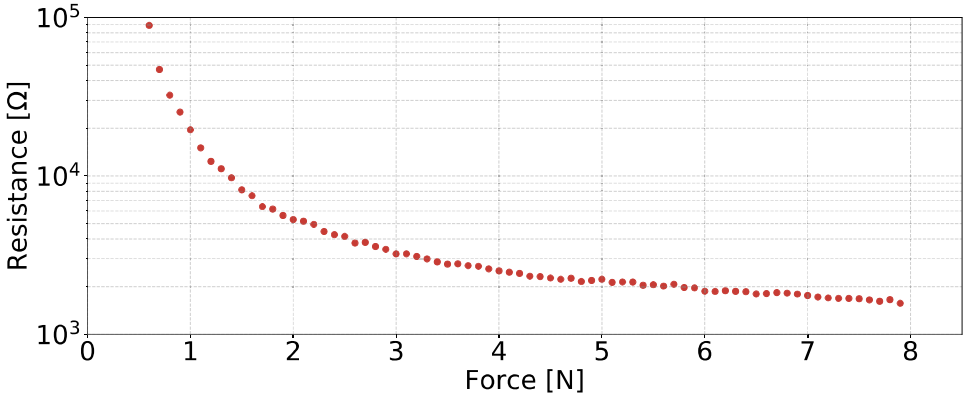
tacterion GmbH | Nymphenburger Straße 5 | 80335 Munich | Germany
T: +49 (0) 89 452 457 50 | support@tacterion.com | www.tacterion.com

Sensor Characteristics

A circular test tool with 8 mm diameter was used to indent the sensor, resulting in an actuation area of 0.5 cm^2.

General Sensor Characteristics (Resistance-Force)



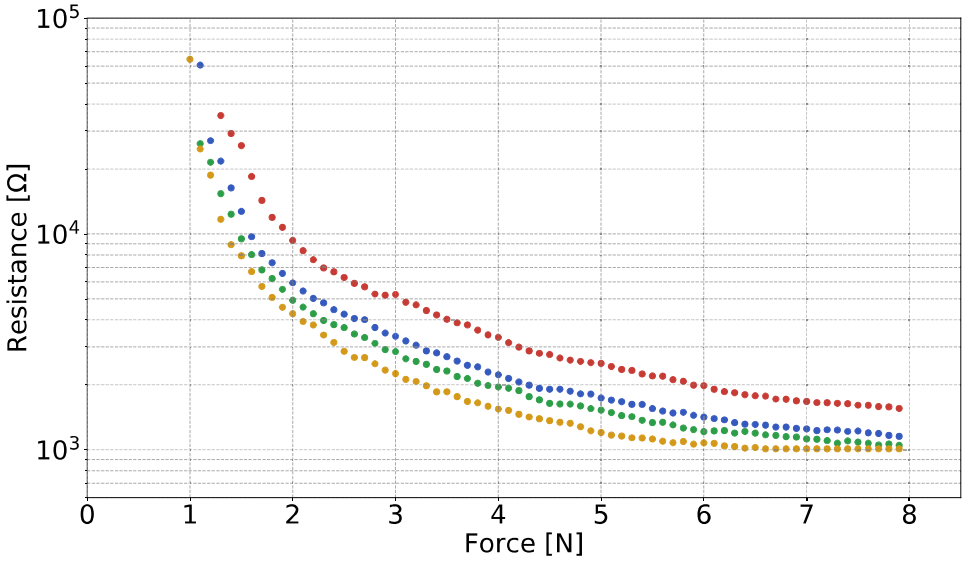


In the following, the sensor resistance is determined for gradually increasing force levels according to the depicted actuation profile.

The resistance is measured in a voltage divider configuration with a 2 kΩ reference resistor.

Characteristics vary across the active area of sensors. At a force of 4 N, measuring 6 different sensing elements at 5 points each, yields a standard deviation of 750 Ω.

Sensor Response under Cyclic Loading



A dynamic force of 10 N is exerted on the sensor at a frequency of 2 Hz. The sensor characteristics are recorded once after 10k, 100k, as well as 500k indentations and plotted alongside the characteristics of the sensor prior to loading.

- Initial response
- After 10,000 actuations
- After 100,000 actuations
- After 500,000 actuations

Sensor Response under Static Loading

	At 4 N	At 7 N
After 10 minutes	16 %	8 %
After 1 hour	18 %	10 %
After 10 hours	28 %	20 %

Deviations in sensor readout after applying a static force of 10 N for different durations are calculated at two force levels along the measurement range.

tacterion GmbH | Nymphenburger Straße 5 | 80335 Munich | Germany
T: +49 (0) 89 452 457 50 | support@tacterion.com | www.tacterion.com