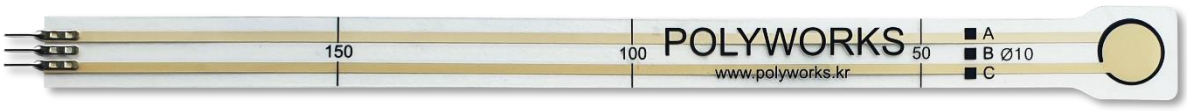
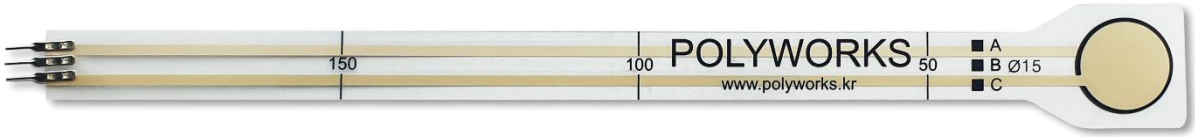
POLYWORKS

Force Sensing Resistor - PSC Series

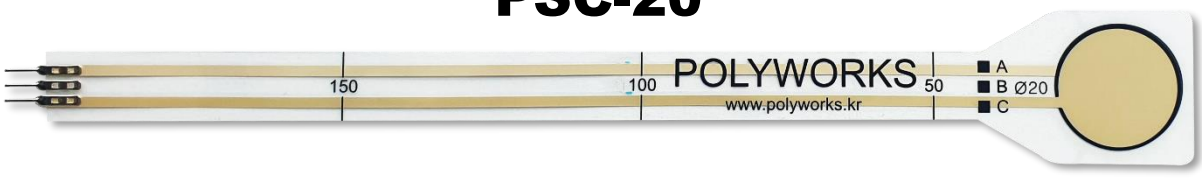
PSC-10



PSC-15



PSC-20



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Revision history

Rev.	Date	Description
1	April 2020	First relese
2	June 2021	

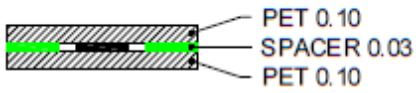
Copyright

Customer support

Polyworks Tech. Support: Polyworks offers multiple technical support plans and service packages to help our customers.

Physical Specification

- Thickness : 0.23mm
- Substrate : Polyester
- Connection : 3pin - 2.54mm pitch
- Length : 50mm, 100mm 150mm (Selectable)
- Width : Check [figure 1]
- Sensing Area : 10pi, 15pi , 20pi (Selectable)



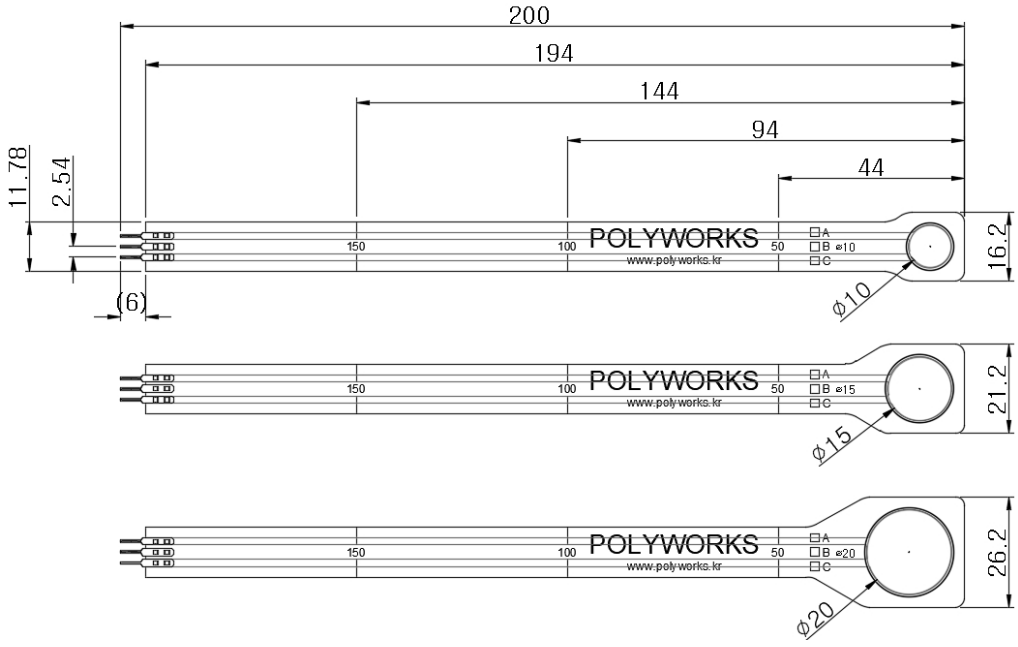
Thickness : 0.23 ± 10%

[figure 1]

Electric Specification

	Value	Note
Force Range	~200N	
Repeatability	±5%	
Part to Part Distribution Criteria	±30%	
No load resistance	> 5Mohm	Stand off resistance
Drift Range	<3%(in log scale)	24hours w 20N
Operating Temp Range	-20℃ ~ 70℃	
Force Resolution	Continuous	
Life Time	>Million Actuations	Room Temperature, 30N

Package Dimension

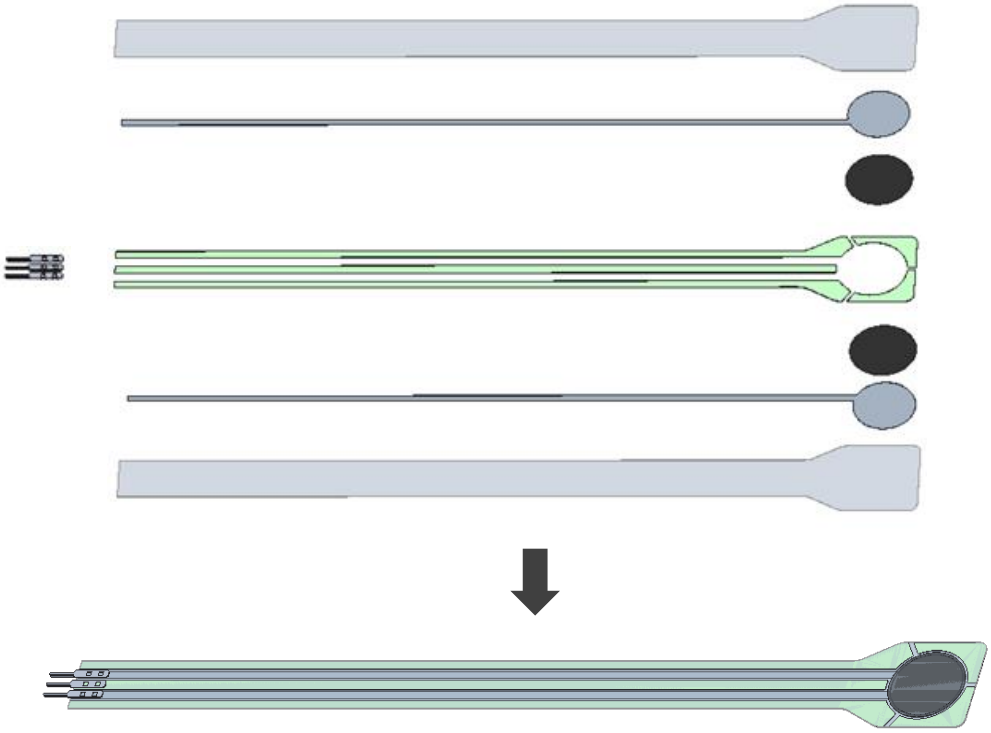


Ordering Information

- PN : PSC-XX-OOO

  XX : Diameter of cell(Φ) -10,15,20 OOO : Length of tail(mm) - 200,150,50

Structure



Characteristic Curves [*1]

*** Test 1mm silicon between PSC 20 and load cell**

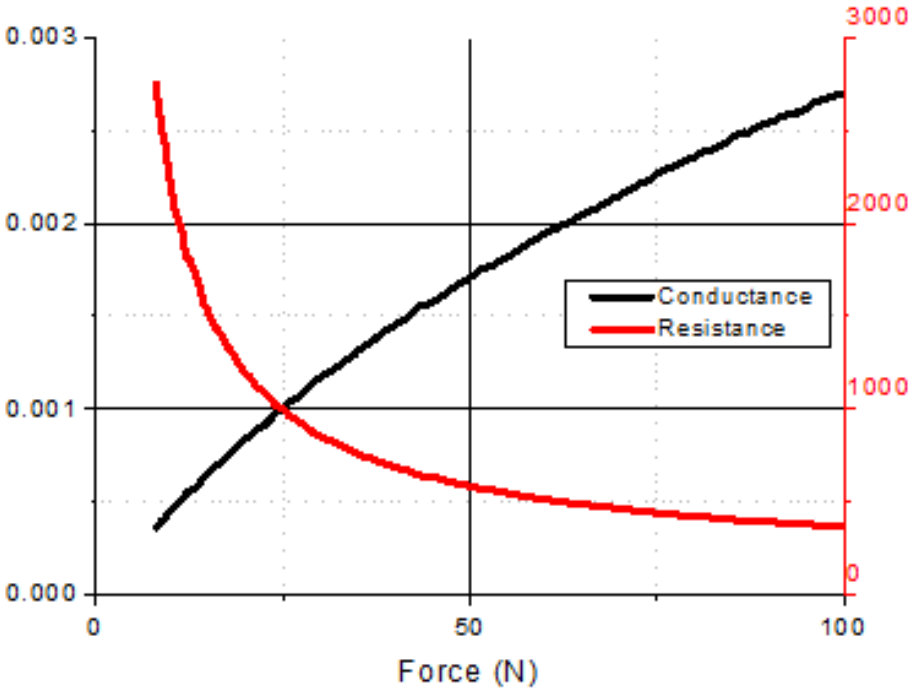


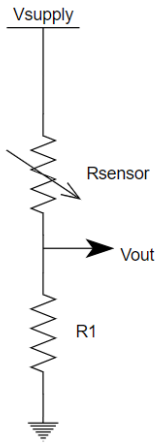
Figure 2. Force Vs Resistance and Conductance

Note.

1. Resistance VS Newton, Conductance VS Newton can be different under test conditions.

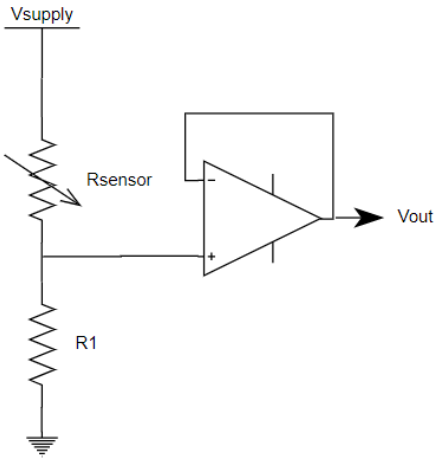
Application Circuits

Voltage Divider



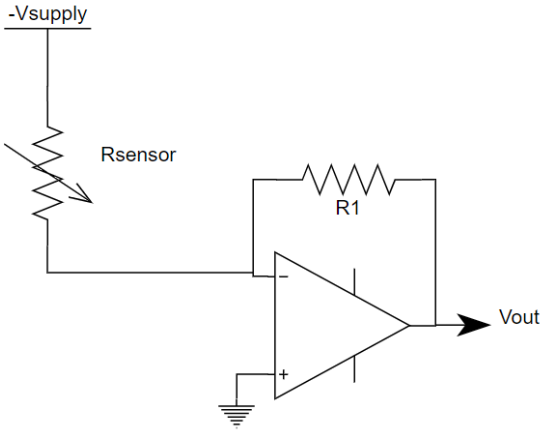
$$Vout = \frac{R1}{Rsensor + R1}$$

Voltage Follower (Unity gain buffer)



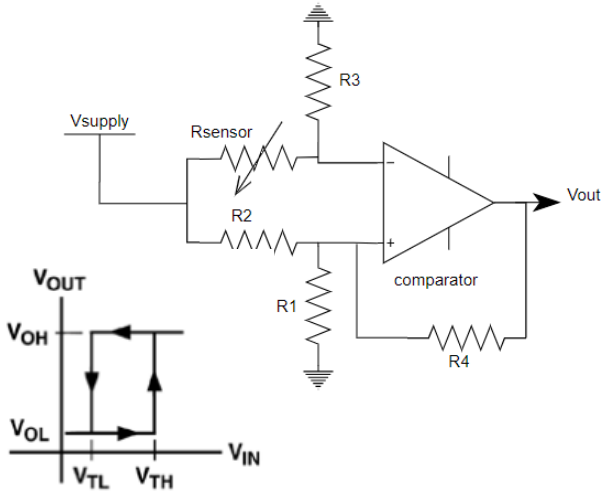
$$Vout = \frac{R1}{Rsensor + R1}$$

Current to Voltage Converter



$$Vout = -\frac{R1}{Rsensor} X(-vsupply)$$

Threshold setup switch



$$\frac{R4}{R2} = \frac{V_{TL}}{V_{TH} - VTL}$$

$$\frac{R2}{R1} = \frac{V_{TL}}{Vsupply - VTH}$$