

SoftPot Datasheets

Mechanical Specifications

| | |
|---|--------------------|
| Life Cycle: | >1 million |
| Height: | ≤0.51mm (0.020") |
| Actuation Force (with a 10mm wide active cavity): | -40°C 0.8 to 1.8 N |
| | -25°C 0.8 to 1.8 N |
| | +23°C 0.6 to 1.5 N |
| | +50°C 0.6 to 1.5 N |

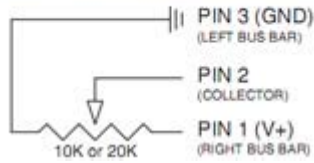
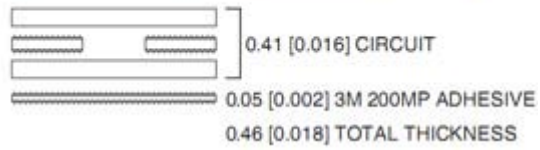
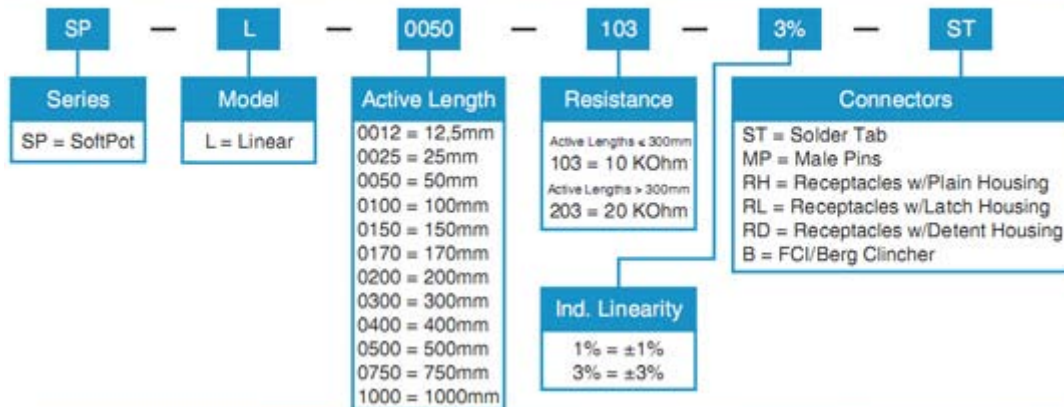
Electrical Specifications

| | |
|---|--|
| Resistance – Standard: | 10k Ohms(lengths >300mm = 20k Ohms) |
| Resistance – Custom: | 1k to 100k Ohms |
| Resistance Tolerance: | ±20% |
| Effective Electrical Travel: | 8 to 2000mm |
| Linearity (Independent): | Linear ±1% & 3% Rotary ±3% & 5% |
| Repeatability: | No hysteresis, but with any wiper looseness some hysteresis will occur |
| Power Rating (depending on size, varies with length and temperature): | 1 Watt max. @ 25°C, ≤0.5 Watt recommended |
| Resolution: | Analog output theoretically infinite; affected by variation of contact wiper surface area. |
| Dielectric Value: | No affect @ 500VAC for 1 minute |

Environmental Specifications

| | |
|---------------------------|-------------------------------|
| Operating Temperature: | -40°C to +50°C |
| Humidity: | No affect @ 95% RH, 4hrs 50°C |
| IP Rating of Active Area: | IP65 |

SoftPot Diagrams and Schematics

Electrical Schematic

Material Cross-Section

How to Order - Linear SoftPots

Standard Connector Options


Crimflex Solder Tab (ST)



Crimflex Short Male Pins (MP)



Crimflex Female Receptacles with a Plain Housing (RH)



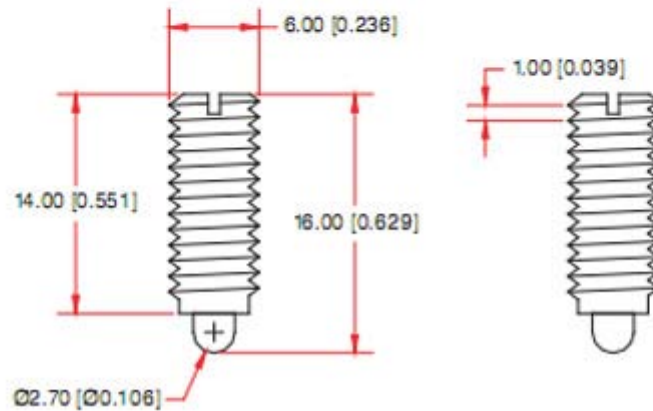
Crimflex Female Receptacles with a Latch Housing (RL)



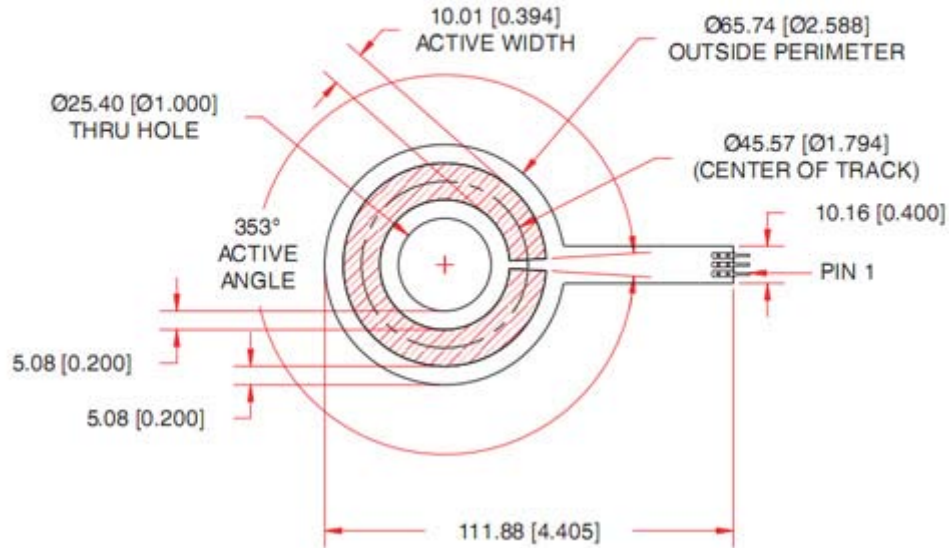
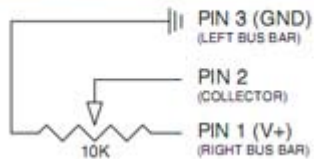
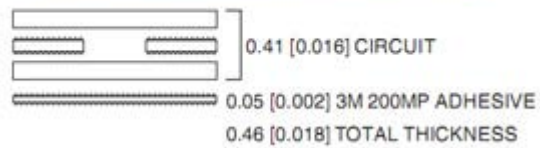
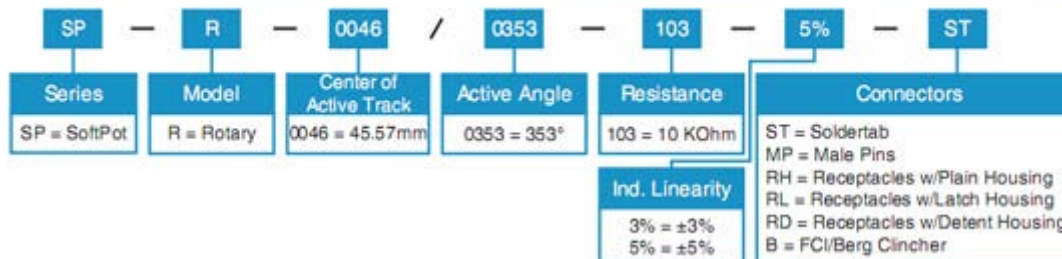
Crimflex Female Receptacles with a Detent Housing (RD)

Stock Wiper
Mechanical Specifications




- Minimum Force: 1 Newton
- Maximum Force: 3 Newtons
- Tip Material: Delrin
- Thread Pitch: M6 (1mm)


Dimensional Diagram

How to Order - Stock Wiper

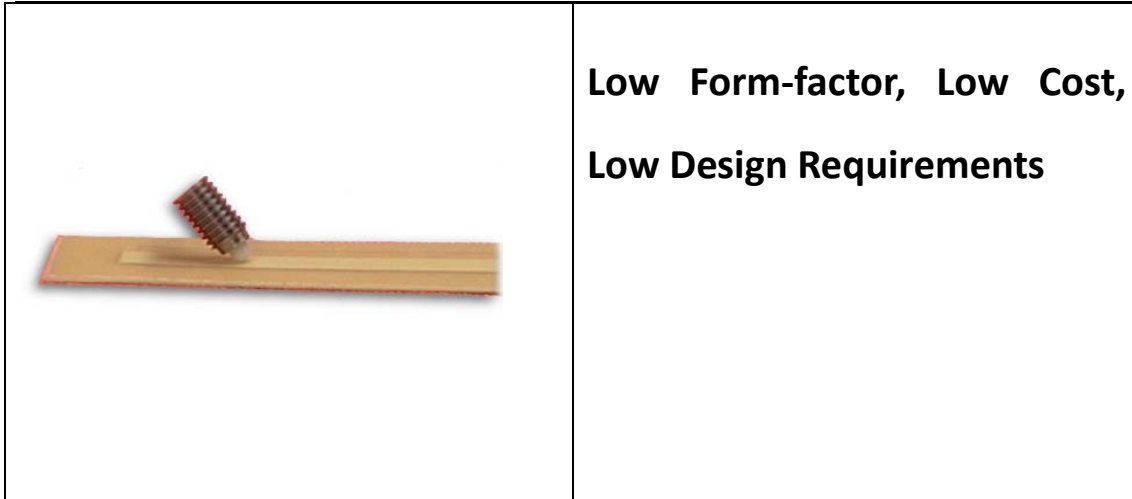
| | | | | | | | | | | |
|---------------|---|---------------------|---|-------------------|---|-------------------|---|-----------------------------|---|---------------------|
| WP | — | M6 | — | 01 | — | 03 | — | 014 | — | DI |
| Series | | Thread Pitch | | Min. Force | | Max. Force | | Threaded Body Length | | Tip Material |
| WP = Wiper | | M6 = M6 | | 01 = 1 Newton | | 03 = 3 Newtons | | 014 = 14mm | | DI = Delrin |

Diagram - Stock Rotary SoftPot

Electrical Schematic

Material Cross-Section

How to Order - Rotary SoftPot


The SoftPot membrane potentiometer acts as an infinitely variable analog voltage divider. Spectra Symbol designed the SoftPot to fit almost any configuration, whether linear or rotary, with active linear lengths up to 2,400 mm.

| | |
|---|--|
|  | <p>SoftPot sensors are available</p> <p>Spectra Symbol manufacture: Standard (available on stock) and custom series</p> |
|  | <p>SoftPot – standard rectilinear sensors</p> <p>Length [mm] – 50 (1.969"), 100 (3.937"), 170 (6.692"), 200 (7.874"), 300 (11.811"), 400 (15.748"), 500 (19.685")</p> <p>Resistance – 50-300mm: 10 kOhm, 400-500mm: 20 kOhm</p> <p>Res.-Tol. – $\pm 20\%$</p> <p>Lin.-Tol. – $\pm 3\%$</p> <p>Temp. – $-40^{\circ}\text{C}..+50^{\circ}\text{C}$</p> |
|  | <p>SoftPot – standard rotary sensors</p> <p>SoftPot – standard rotary sensors</p> <p>Diameter [mm] – 46 (1.811")</p> <p>Resistance – 10 kOhm</p> <p>Res.-Tol. – $\pm 20\%$</p> <p>Lin.-Tol.. – $\pm 3\%$</p> <p>Temp. – $-40^{\circ}\text{C}..+50^{\circ}\text{C}$</p> |

SoftPot Membrane Potentiometer



**Low Form-factor, Low Cost,
Low Design Requirements**

SoftPot Potentiometer

Optimizing your manufacturing processes can increase your chances of gaining higher productivity and return on investment. Spectra Symbol, a trusted name in the linear position sensor manufacturing industry, provides components that will help achieve your business goals.

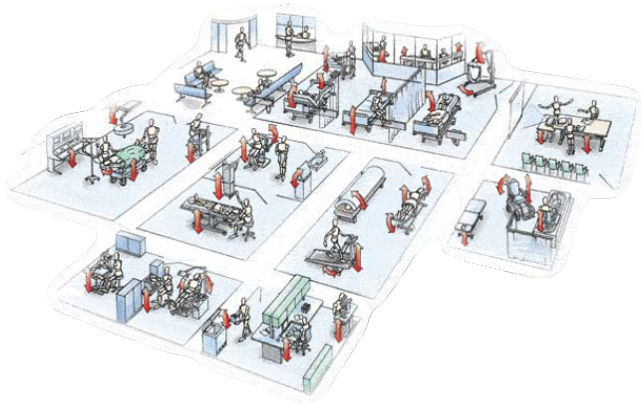
The SoftPot potentiometer is a linear sensing device used for tracking position and acquiring the preferred output in a variety of applications. It comes in lengths from 10mm to 2000mm and offers a low form factor of less than 0.5mm, making it the thinnest linear sensor available today. It is also economical and easy to use. You can simply mount it on a surface and activate it using a spring-loaded wiper.

What's Good about SoftPot

The SoftPot works in multiple configurations, such as linear, serpentine, and elliptical. It operates in temperatures ranging from -45°C to 50°C and is ideal for products that need a sealed sensor with a tight form factor. It's no wonder it became a popular option for clients in the medical, dental, and robotics industry. The SoftPot is also a versatile sensor that can operate by human touch. It can provide the desired linear output regardless of the shape of the product it's attached to.

• Use in Actuators:

- Actuators are found wherever position is automated.
- The membrane potentiometer technology offers a low form-factor for the feedback it provides.
- Recommended for use whenever absolute position is required.



• Design into Hand-held Medical Devices

- The SoftPot is ideal for medical environments that rarely gets close to 50°C but require a sealed sensor and a tight form-factor.
- Thin-SoftPot designs are attractive to disposable instrumentation for its high-quantity, low cost requirements.

Contact us today to inquire about our linear position sensors and get a free quote.