

ThinPot



SoftPot



Features

- Linear Position Sensor
- Half the width of the SoftPot
- IP65 Dust Proof, Water Proof (Intense Spray)
- Polyester Substrate
- 3M Pressure Sensitive Adhesive (PSA)
- Upon Request
 - Male or Female Nicomatic or Berg Connectors
 - Wiper of 0.7-2.2 Newton Force to Actuate Part

Mechanical Specifications

- Life Cycle: >1 million
- Height: $\leq 0.51\text{mm}$ (0.020")
- Actuation Force (with a 6mm wide active cavity):
 - 40°C 0.9 to 2.2 N
 - 25°C 0.9 to 2.2 N
 - +23°C 0.7 to 1.8 N
 - +50°C 0.7 to 1.8 N

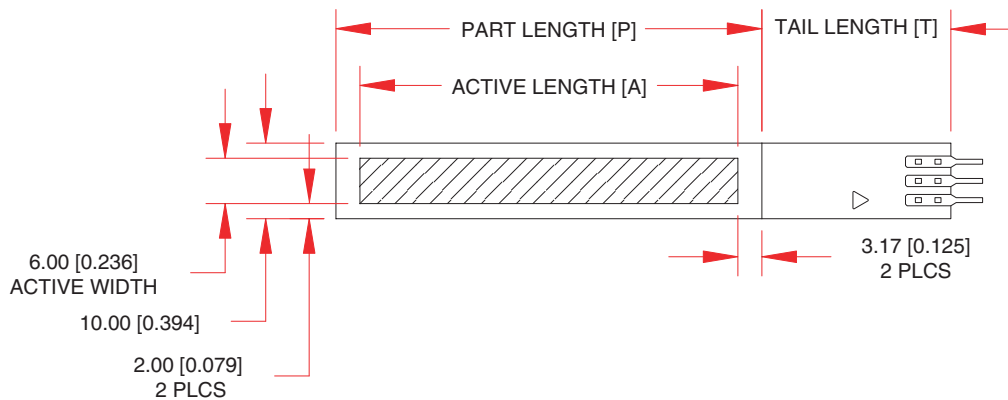
Environmental Specifications

- Operating Temperature: -40°C to +50°C
- Humidity: No affect @ 95% RH, 4hrs 50°C
- IP Rating of Active Area: IP64

Electrical Specifications

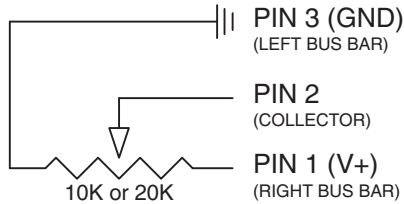
- Resistance - Standard: 10k Ohms (lengths >300mm = 20k Ohms)
- Resistance - Custom: 1k to 100k Ohms
- Resistance Tolerance: $\pm 20\%$
- Effective Electrical Travel: 8 to 2000mm
- Linearity (Independent): Linear $\pm 1\%$ or $\pm 3\%$
Rotary $\pm 3\%$ or $\pm 5\%$
- Repeatability: No hysteresis, but 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

Dimensional Diagram - Stock Linear ThinPot

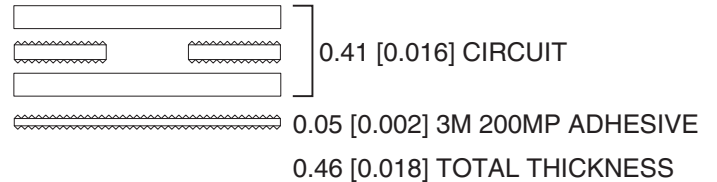


| | | | | | | | | | | | | |
|---|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| A | 12.50mm 0.492" | 25.00mm 0.984" | 50.00mm 1.969" | 100.00mm 3.937" | 150.00mm 5.906" | 170.00mm 6.693" | 200.00mm 7.874" | 300.00mm 11.811" | 400.00mm 15.748" | 500.00mm 19.685" | 750.00mm 29.528" | 1000.00mm 39.370" |
| P | 18.85mm 0.742" | 31.35mm 1.234" | 56.35mm 2.219" | 106.35mm 4.187" | 156.35mm 6.156" | 176.35mm 6.943" | 206.35mm 8.124" | 306.35mm 12.061" | 406.35mm 15.998" | 506.35mm 19.935" | 756.35mm 29.778" | 1006.35mm 39.620" |
| T | 12.70mm 0.500" | | 25.00mm 0.984" | | | | | | | | | |

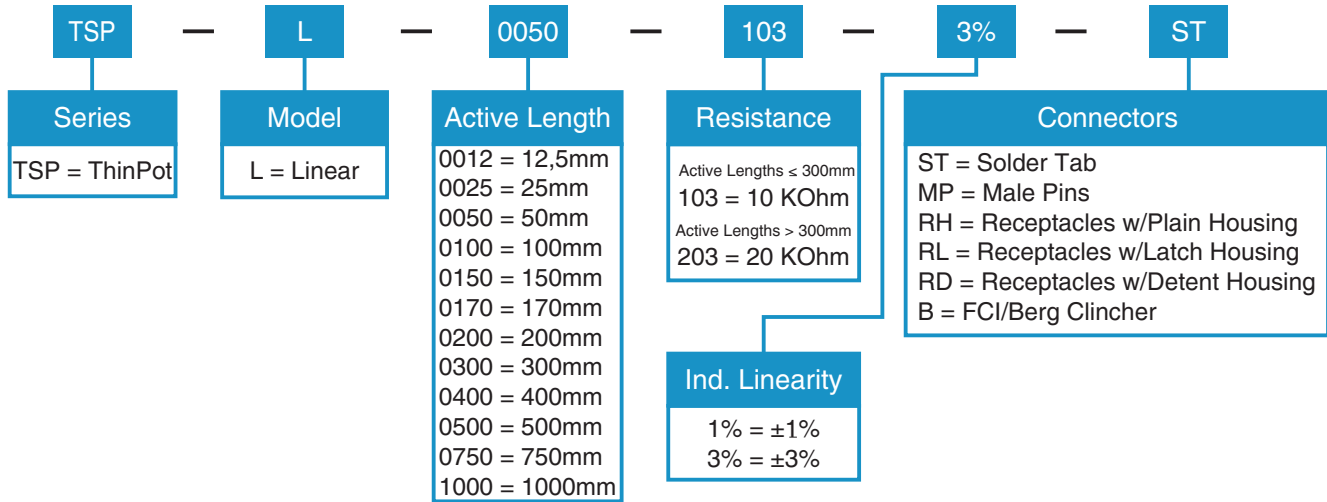
Electrical Schematic



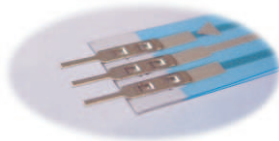
Material Cross-Section



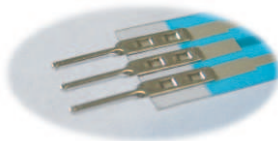
How to Order - Linear ThinPots



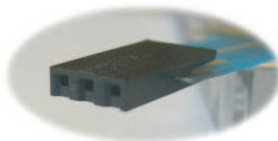
Standard Connector Options



Crimpflex Solder Tab (ST)



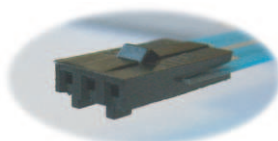
Crimpflex Short Male Pins (MP)



Crimpflex Female Receptacles with a Plain Housing (RH)



Crimpflex Female Receptacles with a Latch Housing (RL)



Crimpflex Female Receptacles with a Detent Housing (RD)



FCI/Berg Clincher (B)

Customization

Customize the size, shape, and even the number of tracks. Such custom requests, for example, can be: multiple ganged sensors (up to 40 tracks); serpentine active area track; custom lengths 10mm-2000mm; custom rotary diameters, etc. Feel free to contact Spectra Symbol with your custom request at sales@spectrasymbol.com or (888)795-2283.

How It Works

In simple terms, the ThinPot membrane potentiometer is a resistive element, which comprises a conductive resistor, a sealed encasement and a simple wiper assembly. A membrane potentiometer can also function as a voltage divider.

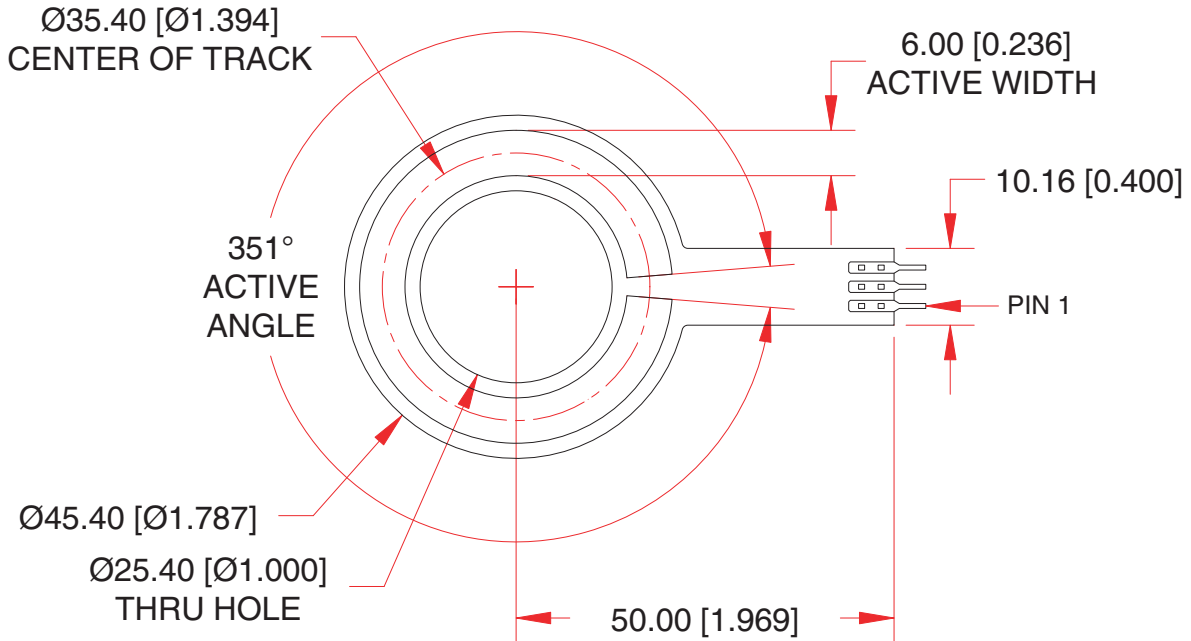
The ThinPot is a three-wire system with two resistive output channels and an electrical collector channel.



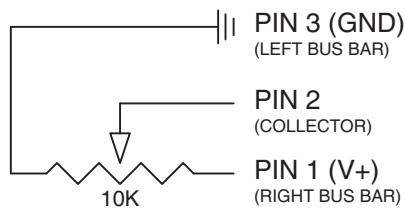
By pressing a wiper down onto the top circuit the SoftPot produces the desired electrical output. The "wiper" is a non-conductive mechanism that depresses the top circuit actuating the potentiometer from the outside of the element. The top and bottom circuits are separated by 0.15mm (0.006") of spacer adhesive build-up and contact between the circuit occurs by pressure (usually 0.7-1.8 Newtons) from the wiper on the top circuit, pushing down until the top circuit connects with the bottom circuit to create a potentiometric output.



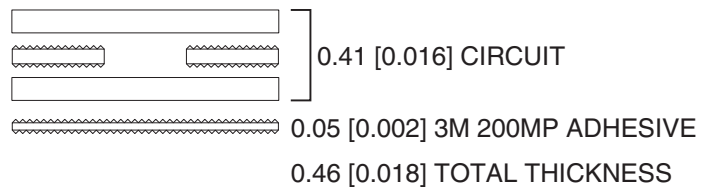
The construction of the wiper design can adapt to any application because most materials can serve as the wiper: plastics, metals, sliders, rollers, wheels, etc. Also, the ThinPot can also be manually (hand) actuated.



Electrical Schematic



Material Cross-Section



How to Order - Rotary ThinPot

| | | | | | | | | | | | | |
|---------------|---|--------------|---|-------------------------------|---|---------------------|---|-----------------------|---|--|---|----|
| TSP | — | R | — | 0036 | / | 0351 | — | 103 | — | 5% | — | ST |
| Series | | Model | | Center of Active Track | | Active Angle | | Resistance | | Connectors | | |
| TSP = ThinPot | | R = Rotary | | 0036 = 35.40mm | | 0351 = 351° | | 103 = 10 KOhm | | ST = Soldertab MP = Male Pins RH = Receptacles w/Plain Housing RL = Receptacles w/Latch Housing RD = Receptacles w/Detent Housing B = FCI/Berg Clincher | | |
| | | | | | | | | Ind. Linearity | | | | |
| | | | | | | | | 3% = ±3% | | | | |
| | | | | | | | | 5% = ±5% | | | | |