THINPOT TSP

ThinPot

SoftPot

Features

- Linear Position Sensor
- Half the width of the SoftPot
- IP64 Dust Proof, Splash Proof
- 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: ≤0.51mm (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

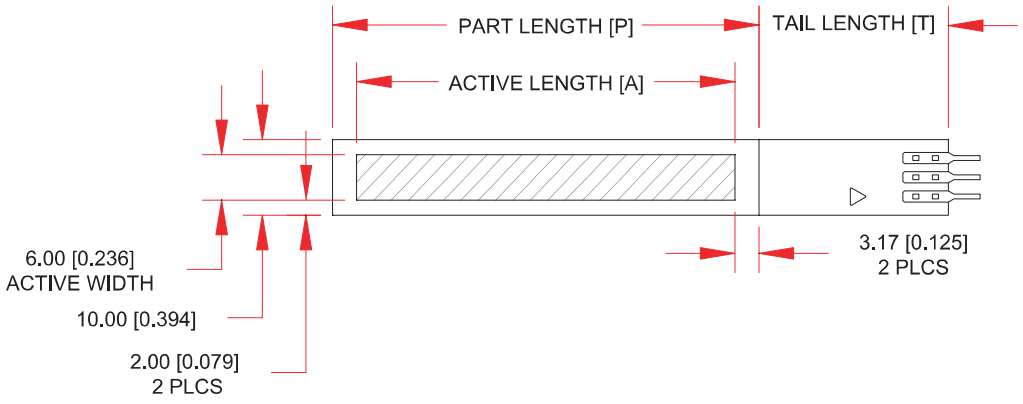
Environmental Specifications

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

Electrical Specifications

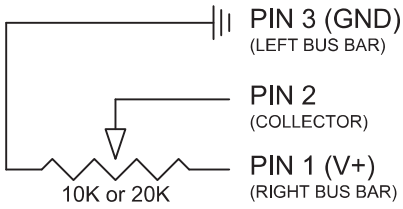
-Resistance - Standard: 10k Ohms (lengths >300mm = 20k Ohms)
-Resistance - Custom: 1k to 100k Ohms
-Resistance Tolerance: ±20%
-Effective Electrical Travel: 8 to 2000mm
-Linearity (Independent): Linear ±1% or ±3%
Rotary ±3% or ±5%
-Repeatability: No hysteresis, but with any wiper looseness some hysteresis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

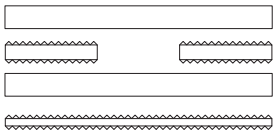


A	12.50mm 0.492"	25.00mm 0.984"	50.00mm 1.969"	100.00mm 3.937"	150.00mm 5.906"	170.00mm 6.693"	200.00mm 7.874"	300.00mm 11.811"	400.00mm 15.748"	500.00mm 19.685"	750.00mm 29.528"	1000.00mm 39.370"
P	18.85mm 0.742"	31.35mm 1.234"	56.35mm 2.219"	106.35mm 4.187"	156.35mm 6.156"	176.35mm 6.943"	206.35mm 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

TSP — L — 0050 — 103 — 3% — ST

Series
TSP = ThinPot

Model
L = Linear

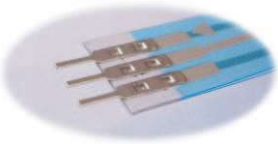
Active Length
0012 = 12,5mm
0025 = 25mm
0050 = 50mm
0100 = 100mm
0150 = 150mm
0170 = 170mm
0200 = 200mm
0300 = 300mm
0400 = 400mm
0500 = 500mm
0750 = 750mm
1000 = 1000mm

Resistance
Active Lengths ≤ 300mm
103 = 10 KOhm
Active Lengths > 300mm
203 = 20 KOhm

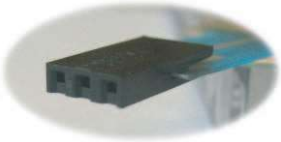
Ind. Linearity
1% = ±1%
3% = ±3%

Connectors
ST = Solder Tab
MP = Male Pins
RH = Receptacles w/Plain Housing
RL = Receptacles w/Latch Housing
RD = Receptacles w/Detent Housing
B = FCI/Berg Clincher

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

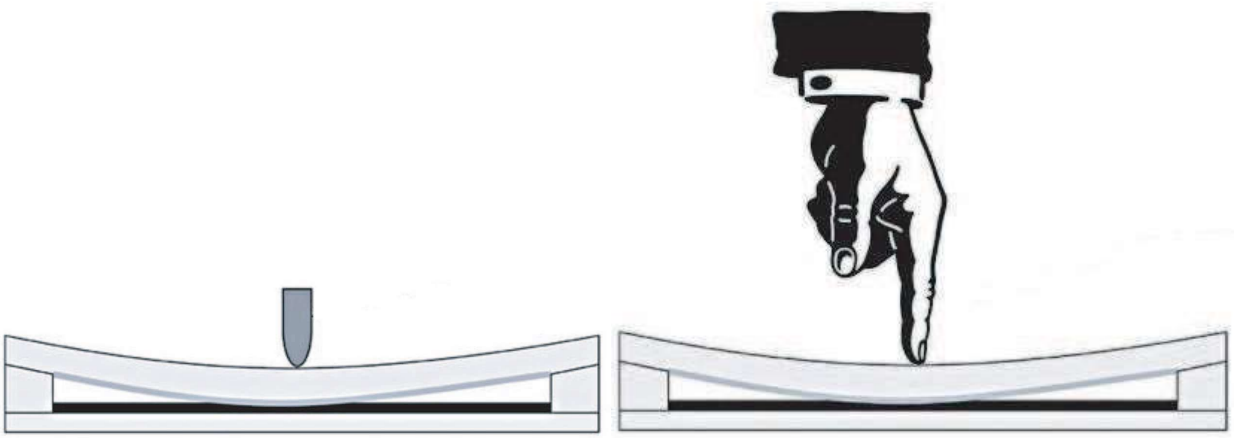
Customize the size, shape, and even the number of tracks. Such custom requests, for example, can be: multiple ganged sensors (up to 40 tracks); serpentine active area track; custom lengths 10mm-2000mm; custom rotary diameters, etc. Feel free to contact Spectra Symbol with your custom request at sales@spectrasymbol.com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

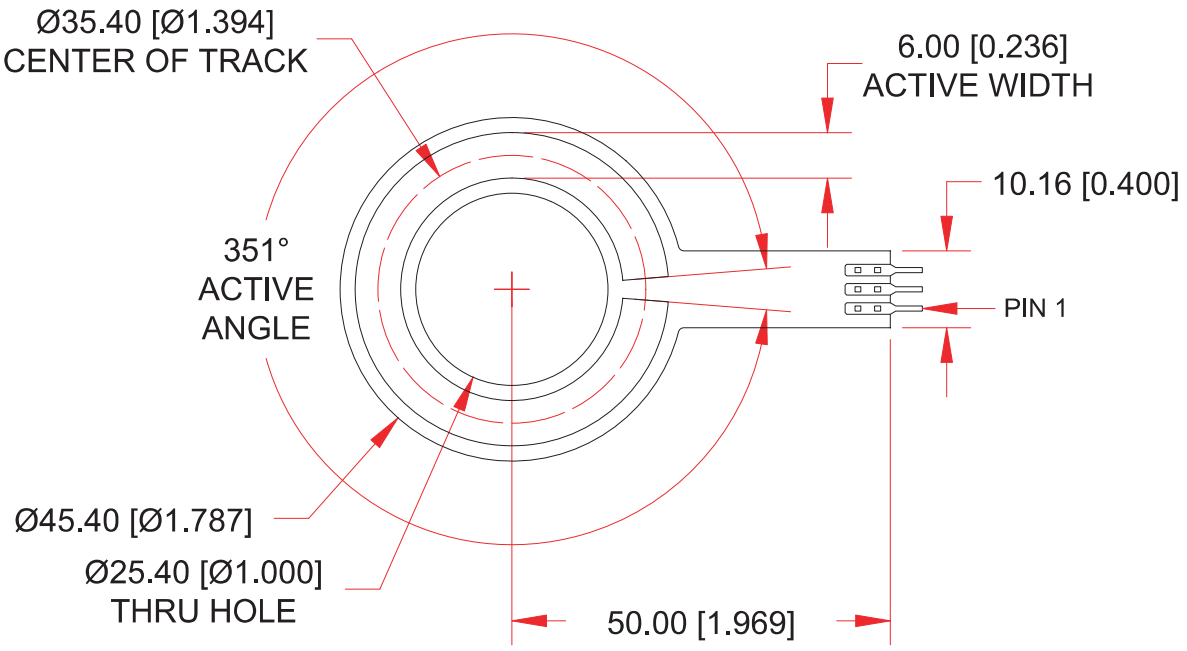
The ThinPot is a three-wire system with two resistive output channels and an electrical collector channel.

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.

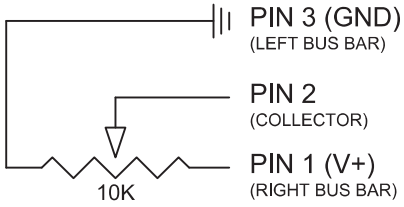


The construction of the wiper design can adapt to any application because most materials can serve as the wiper: plastics, metals, sliders, rollers, wheels, etc. Also, the ThinPot can also be manually (hand) actuated.

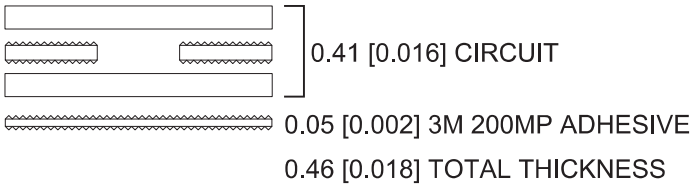
Diagram - Stock Rotary ThinPot



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	Ind. Linearity	Connectors
TSP = ThinPot	R = Rotary	0036 = 35.40mm	0351 = 351°	103 = 10 KOhm	3% = ±3% 5% = ±5%	ST = Soldertab MP = Male Pins RH = Receptacles w/Plain Housing RL = Receptacles w/Latch Housing RD = Receptacles w/Detent Housing B = FCI/Berg Clincher