

Linear Precision Potentiometer

Model 400 Series



Features:

- Linear actuation
- Conductive plastic
- Multiple styles available



Model Styles Available

Model #	Body Style	Termination Style	Weight (grams)
423	Round	Wire Leads	28 + (16 x mechanical travel)
424	Round	Gold Plated Terminals	28 + (16 x mechanical travel)
432	Round with Mounting Flange	Wire Leads	38 + (16 x mechanical travel)
434	Round with Mounting Flange	Gold Plated Terminals	38 + (16 x mechanical travel)
472	Rectangular	Wire Leads	21 + (12 x mechanical travel)
474	Rectangular	Gold Plated Terminals	21 + (12 x mechanical travel)
482	Rectangular with Mounting Flange	Wire Leads	23 + (12 x mechanical travel)
484	Rectangular with Mounting Flange	Gold Plated Terminals	23 + (12 x mechanical travel)

Electrical

Resistance Range	see Table 1
Standard Resistance Tolerance	±10%
Minimum Practical Resistance Tolerance	±5%
Independent Linearity ²	see Table 1
Minimum Practical Independent Linearity	see Table 1
Input Voltage	400 VDC maximum, not to exceed power rating
Power Rating	see Table 1 for Watts at 70°C, derating to 0 at 125°C
Dielectric Strength	1,000 V rms
Insulation Resistance	1,000 Megohms minimum
Output smoothness	0.1% maximum at 10" to 18" per minute
Actual Electrical Travel	see Table 1
Electrical Continuity Travel	within mechanical travel
End Voltage	maximum 0.5% of input voltage
Resolution	essentially infinite
Temperature Coefficient of Resistance ³	-400 ppm/°C typical
Temperature Coefficient of Output Voltage ⁴	±10 ppm/°C typical

General Note

TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

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Mechanical

Total Mechanical Travel	see Table 1
Actuating Force	10 oz. maximum
Shaft Rotation	continuous
Backlash	0.003" maximum
Static Stop Strength	10 lb. minimum

¹ Specifications subject to change without notice.
² Linearity is measured between 1% and 99% of input voltage.
³ Special TCR available to ± 100 ppm/ $^{\circ}$ C.
⁴ Measured with 10 VDC CW to CCW and slider at 50% of electrical travel.

Environmental

Operating Temperature Range	-40 $^{\circ}$ C to +125 $^{\circ}$ C dynamic, -55 $^{\circ}$ C to +125 $^{\circ}$ C static
Load Life	10 million shaft actuations at rated power & 70 $^{\circ}$ C, maximum 10% Δ R

Ordering

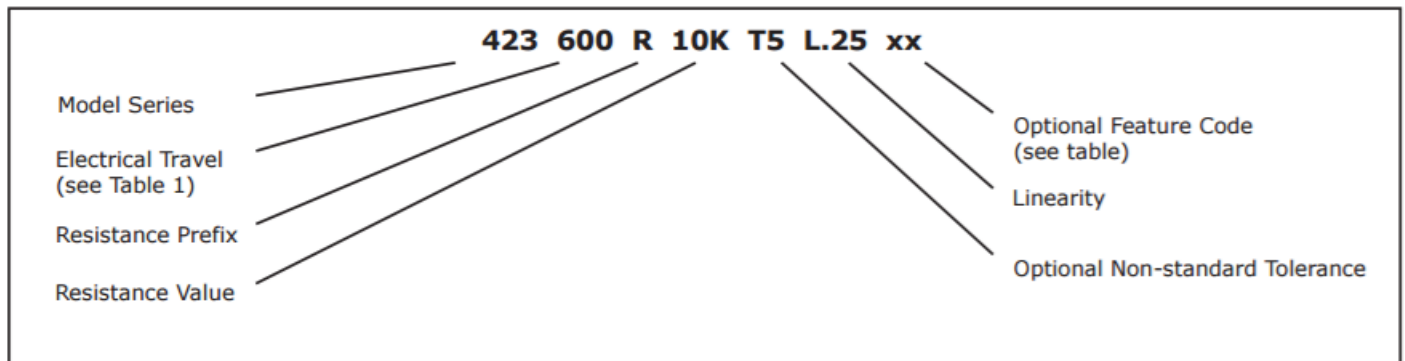


Table 1

Electrical Travel (Inches)	0.5"	1.0"	2.0"	3.0"
Ordering #	050	100	200	300
Standard Resistance Range (Ohms)	1K to 150K	2K to 300K	4K to 600K	8K to 900K
Standard Independent Linearity	$\pm 1.0\%$	$\pm 0.75\%$	$\pm 0.5\%$	$\pm 0.5\%$
Minimum Practical Independent Linearity	0.5%	0.25%	0.25%	0.25%
Power Rating (Watts)	0.5	0.75	1.0	1.5
Mechanical Travel (Inches)	0.6"	1.1"	2.1"	3.1"

Electrical Travel (Inches)	4.0"	5.0"	6.0"
Ordering #	400	500	600
Standard Resistance Range (Ohms)	1.2K to 1Meg	1.5K to 1.3Meg	2K to 1.5Meg
Standard Independent Linearity	$\pm 0.5\%$	$\pm 0.5\%$	$\pm 0.25\%$
Minimum Practical Independent Linearity	0.25%	0.25%	0.15%
Power Rating (Watts)	2.0	2.5	3.0
Mechanical Travel (Inches)	4.1"	5.1"	6.1"

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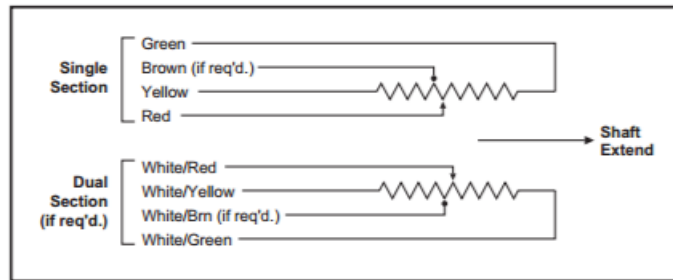
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Feature Codes

Center Tap	CT
Linearity Tape	LT
Two Gangs (dual section)	2G

Circuit Diagram



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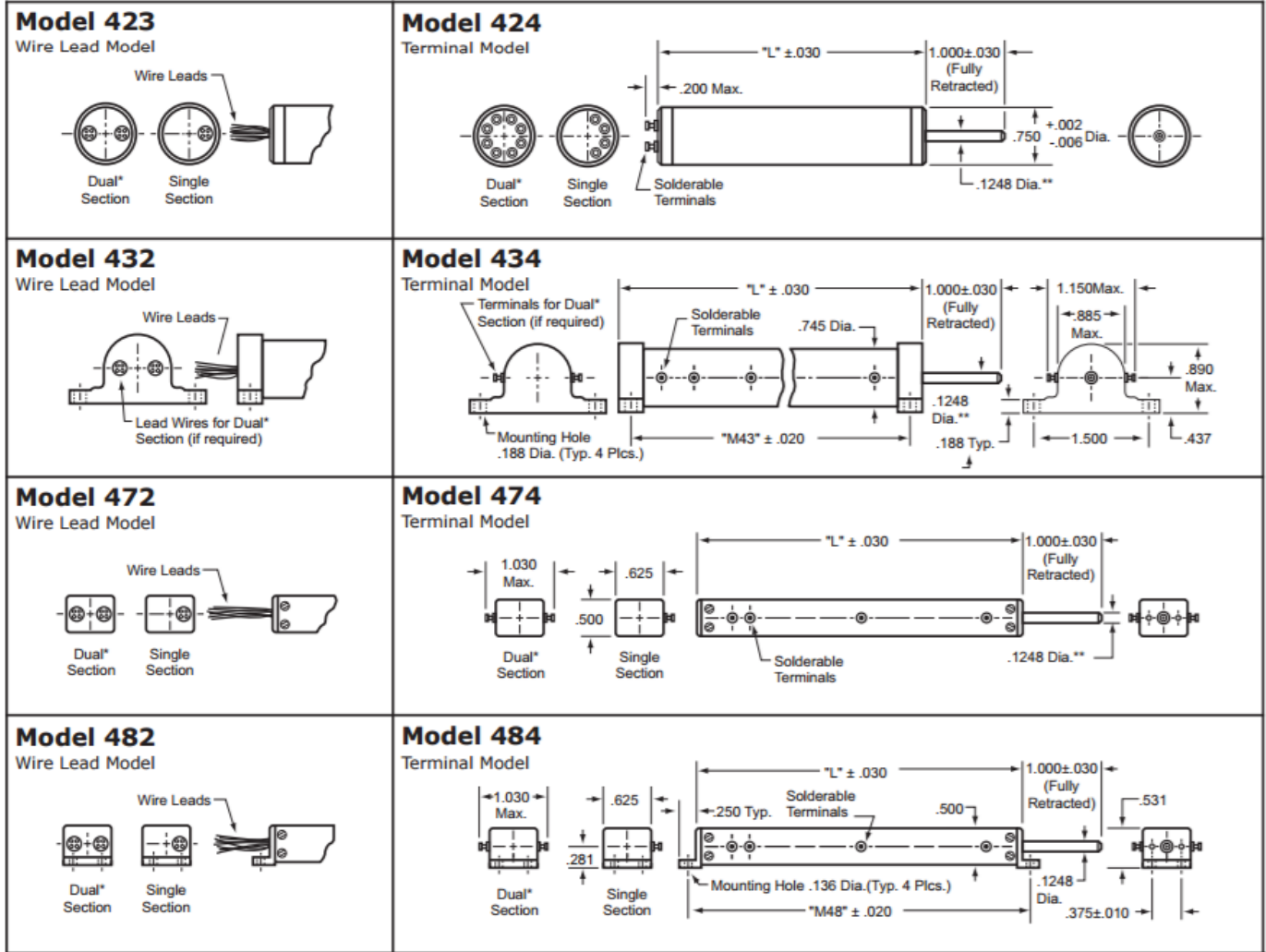
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Outline Drawings



Model Number	Elect. Travel Inch ± 0.015	Mech. Travel Inch ± 0.030	Dim "L" Inch ± 0.030	Dim "M43" Inch ± 0.020	Dim "M48" Inch ± 0.020
4XX-050	0.500	0.560	1.500	1.188	1.750
4XX-100	1.000	1.060	2.000	1.688	2.250
4XX-200	2.000	2.060	3.000	2.688	3.250
4XX-300	3.000	3.060	4.000	3.688	4.250
4XX-400	4.000	4.100	5.000	4.688	5.250
4XX-500	5.000	5.100	6.000	5.688	6.250
4XX-600	6.000	6.100	7.000	6.688	7.250

Notes:

- * Dual sections and Center Tap are available on special order only
- ** Diameter is 0.1248" +0.0000" / -0.0003"

Unspecified tolerances are ±0.005"
 Dimensions for "Wire Lead" models are the same as "Terminal" models except as indicated.
 Housings, brackets, and caps are anodized aluminum.
 Wire leads are #26 wire, 12 inch minimum length, meets MIL-C-16878C.
 Shafts are stainless steel, chamfer is 0.015" x 45°.

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