

# Model 400 Series

## Linear Actuation Conductive Plastic Precision Potentiometer / Position Sensor



### 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<sup>1</sup>

Resistance Range	see Table 1
Standard Resistance Tolerance	±10%
Minimum Practical Resistance Tolerance	±5%
Independent Linearity <sup>2</sup>	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 <sup>3</sup>	-400 ppm/°C typical
Temperature Coefficient of Output Voltage <sup>4</sup>	±10 ppm/°C typical

### 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

<sup>1</sup> Specifications subject to change without notice.

<sup>2</sup> Linearity is measured between 1% and 99% of input voltage.

<sup>3</sup> Special TCR available to ±100 ppm/°C.

<sup>4</sup> Measured with 10 VDC CW to CCW and slider at 50% of electrical travel.

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## ENVIRONMENTAL (MIL-PRF-39023)

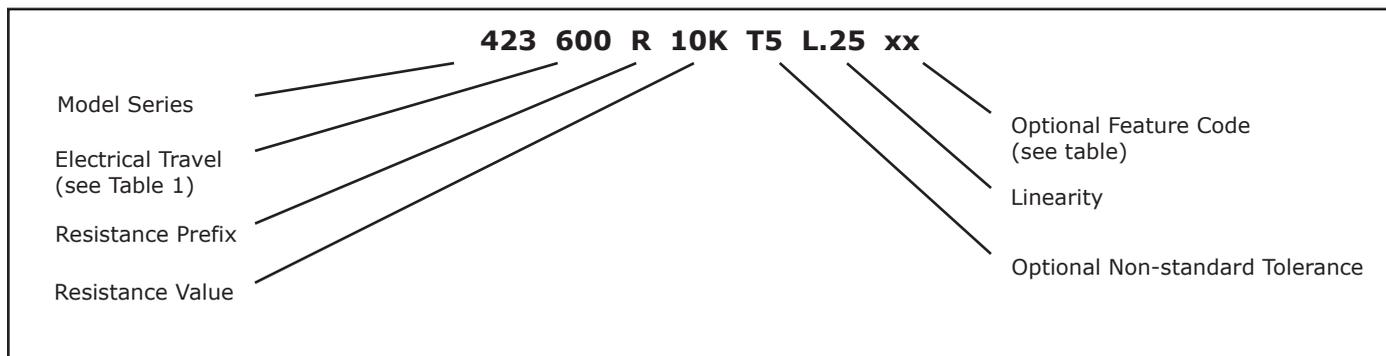
Operating Temperature Range

-40°C to +125°C dynamic, -55°C to +125°C static

Load Life

10 million shaft actuations at rated power & 70°C, maximum 10% ΔR

## ORDERING INFORMATION



**Table 1**

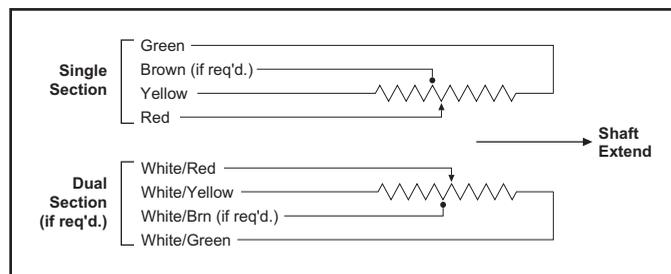
Electrical Travel (Inches)	0.5"	1.0"	2.0"	3.0"
Ordering #	050	100	200	300
Standard Resistance Range (Ohms)	1K to 150K	2K to 300K	4K to 600K	8K to 900K
Standard Independent Linearity	±1.0%	±0.75%	±0.5%	±0.5%
Minimum Practical Independent Linearity	0.5%	0.25%	0.25%	0.25%
Power Rating (Watts)	0.5	0.75	1.0	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	±0.5%	±0.5%	±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"

## FEATURE CODES

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

## CIRCUIT DIAGRAM



**BI Technologies Corporation**

4200 Bonita Place, Fullerton, CA 92835 USA

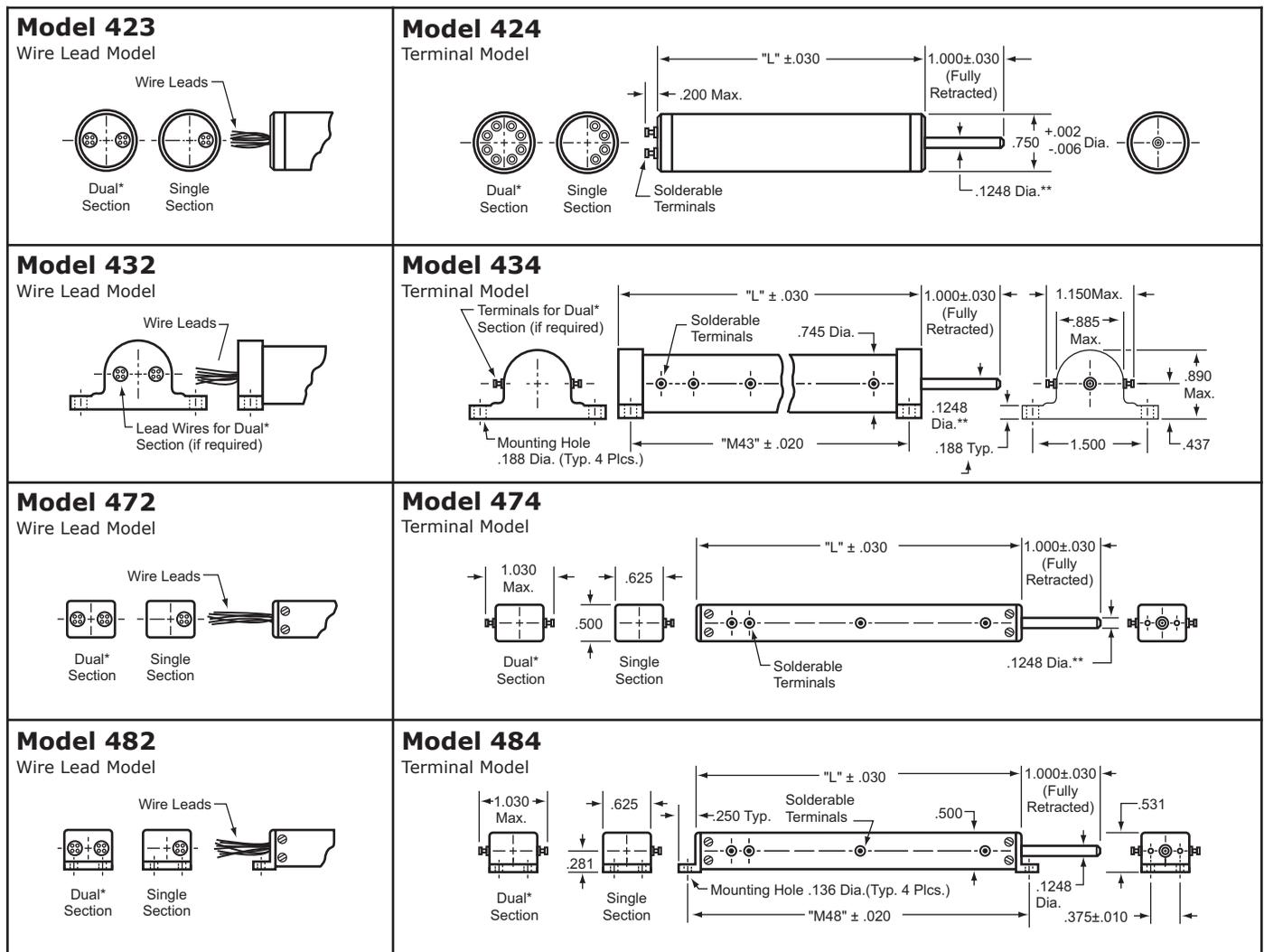
Phone: 714 447 2345 Website: [www.bitechnologies.com](http://www.bitechnologies.com)

April 20, 2012

Model 400 page 2 of 3

# Model 400

## 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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Model 400 page 3 of 3



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