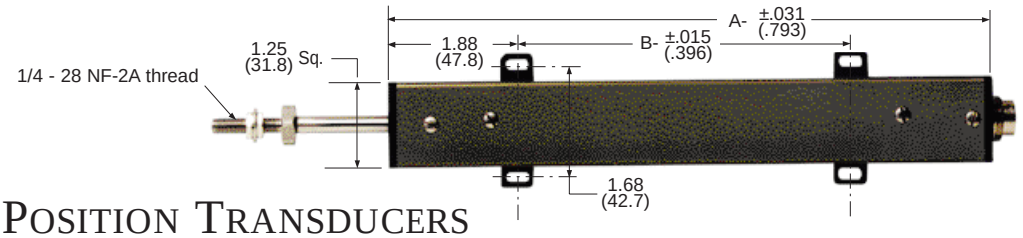
# 100 Series
## Linear Motion
## Infinite Resolution Position Transducers




The 100 Series delivers high-level DC voltage output by utilizing Duncan's proven RESOLON conductive plastic resistance elements for assured linear accuracy, low-noise performance and long life. These position transducers are ideally suited for rugged industrial and hostile environmental applications such as industrial controls, robotics, process controls, production presses, drive systems or replacing linear variable differential transformers (LVDTs). They enjoy an extremely long operating life that can exceed 100 x $10^6$ oscillations or linear traverses.

### Electrical Specifications

Power Rating:
0.75 watts/inch stroke

Temperature Range:
-55° to +125°C

Resolution:
Infinite (conductive plastic)

Stroke (electrical travel):
6" (150mm) to 36" (900mm)
(See table)

### Mechanical Specifications

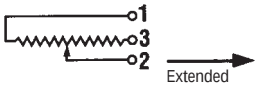
Shaft:
0.250" (6.35) diameter;
1/4-28 threaded end adaptor (furnished)

Actuation Force:
1 lb. (4.4 Newtons) maximum — standard

Repeatability:
Within 0.0005" (.013)

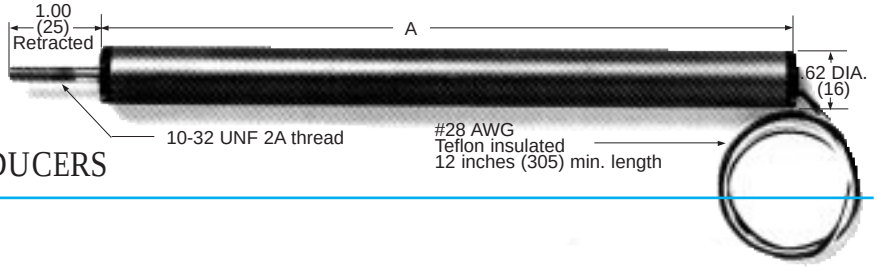
Life:
100 x $10^6$ traverses (up to 12" stroke — derated proportionately for longer units)

### Schematic




| Model | 106 | 109 | 112 | 118 | 124 | 130 | 136 |
|---|---|---|---|---|---|---|---|
| Total Electrical Travel in. (mm) | 6.00 (152) | 9.00 (229) | 12.00 (305) | 18.00 (457) | 24.00 (610) | 30.00 (762) | 36.00 (914) |
| Active Electrical Travel in. (mm) | 5.90 (150) | 8.90 (226) | 11.90 (302) | 17.90 (455) | 23.90 (607) | 29.90 (759) | 35.90 (912) |
| Resistance KΩ ± 20% | 5.0 | 2.4 | 3.2 | 4.8 | 6.4 | 8.0 | 9.6 |
| Linearity Over Active Electrical Travel ±% | 0.07 | 0.07 | 0.07 | 0.05 | 0.05 | 0.05 | 0.05 |
| Mechanical Travel in. (mm) | 6.10 (155) | 9.10 (231) | 12.10 (307) | 18.10 (460) | 24.10 (612) | 30.10 (765) | 36.10 (917) |
| Dimensions A in. (mm) | 8.82 (224) | 11.82 (300) | 14.82 (377) | 20.82 (529) | 26.82 (681) | 32.82 (834) | 38.82 (986) |
| B in. (mm) | 5.00 (127) | 8.00 (203) | 11.00 (279) | 17.00 (432) | 23.00 (584) | 29.00 (737) | 35.00 (889) |
| Total Weight (gms) | 360 | 460 | 580 | 805 | 1025 | 1245 | 1470 |
| Inertia | 70 | 90 | 105 | 145 | 180 | 220 | 260 |

# 600 Series
## Linear Motion Position Transducers




600 Series linear motion position transducers provide extremely accurate measurements in applications that require a rugged instrument operating in a tight area. Their long life, infinite resolution and smooth output deliver high reliability in critical measurements.

Seven models provide a choice of electrical travel from 1" (25mm) to 12" (305mm) and include a floating shaft design to accommodate shaft/interface connecting misalignments. An optional mounting bracket and rod end bearing are available.

### Electrical Specifications

Resistance Tolerance:
±20%

Power Rating at 70°C:
0.25 watts
Per inch of electrical travel derated to 0 watts at 125°C

Output Smoothness:
0.1%

Insulation Resistance at 500 VDC:
1000 megohms

Dielectric Strength:
500 VDC

Temperature Range:
-55 to +125°C

### Mechanical Specifications

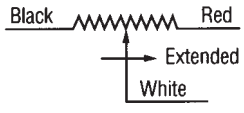
Actuation Force:
2 oz. (.56 Newtons) max.

Repeatability:
Within .0005 in. (.013)

Life:
10 x $10^6$ Cycles

Shaft Alignment:
Floating shaft design allows for shaft/interface misalignment up to 0.010" (.25). Shaft rotates freely

### Schematic




| Model | 601 | 602 | 603 | 604 | 606 | 610 | 612 |
|---|---|---|---|---|---|---|---|
| Total Electrical Travel in. (mm) | 1.00 (25) | 2.00 (51) | 3.00 (76) | 4.00 (102) | 6.00 (152) | 10.00 (254) | 12.00 (305) |
| Active Electrical Travel in. (mm) | .90 (23) | 1.90 (48) | 2.90 (74) | 3.90 (99) | 5.90 (150) | 9.90 (251) | 11.90 (302) |
| Resistance KΩ ±20% | 1.00 | 2.00 | 3.00 | 4.00 | 6.00 | 10.00 | 12.00 |
| Linearity Over Active Electrical Travel ±% | 0.70 | 0.35 | 0.25 | 0.15 | 0.12 | 0.09 | 0.08 |
| Mechanical Travel in. (mm) | 1.10 (28) | 2.10 (53) | 3.10 (79) | 4.10 (104) | 6.10 (155) | 10.10 (257) | 12.10 (307) |
| Case Dimensions "A" in. (mm) | 2.50 (57) | 3.50 (89) | 4.50 (114) | 5.50 (140) | 7.50 (190) | 11.50 (292) | 13.50 (343) |