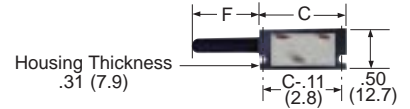
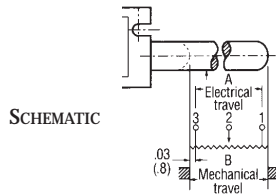


# 9600 SERIES LINEAR POSITION SENSORS



Miniature 9600 Series linear position sensors are ideal when reliability in a harsh operating environment is a primary consideration and size is a major factor. They feature high temperature-stable materials, solderable terminal tabs and a durable spring-loaded function that returns the shaft to the extended position. Typical applications include industrial, automotive, appliance, machine tool and robotics. The 9600 Series is available in three standard strokes and provides excellent resistance, voltage, linearity characteristics and long life at 2,000,000 full cycles (5 million dither cycles).

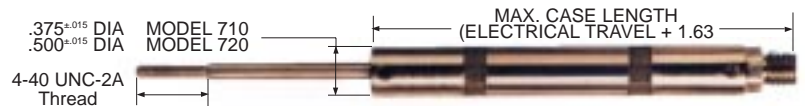


## SPECIFICATIONS (TYPICAL)\*

Model	9605	9610	9615
Total Electrical Travel (A) inches (mm)	0.50 (12.7)	1.00 (25.4)	1.50 (38.1)
Active Electrical Travel	0.40 (10.0)	0.90 (22.8)	1.40 (35.6)
Total DC Resistance $\pm 25\%$	1.7K	3.4K	5.1K
Linearity Over Active Electrical Travel	$\pm 2\%$	$\pm 2\%$	$\pm 2\%$
Best Practical Linearity	$\pm 1.0\%$	$\pm 0.5\%$	$\pm 0.35\%$
Power Rating At 70°C, Watts	.25	.50	.75
Mechanical Travel $\pm .015 (\pm 0.4)$ (B) inches (mm)	0.56 (14.2)	1.06 (26.9)	1.56 (39.6)
Housing Length $\pm .015 (\pm 0.4)$ (C) inches (mm)	1.06 (26.9)	1.56 (39.6)	2.06 (52.3)
Terminal Spacing: (D) inches (mm)	0.30 (7.6)	0.50 (12.7)	0.80 (20.3)
(E) inches (mm)	0.20 (5.1)	0.50 (12.7)	0.70 (17.8)
Fully Extended Length $\pm .015 (0.4)$ (F) inches (mm)	.810 (20.6)	1.310 (33.3)	1.810 (46.0)
Mechanical Life	2,000,000 Full Cycles, 5,000,000 Dither Cycles		
Stop Strength oz. (Newtons)	360 (100)		
Actuation Force oz. (Newtons)	14.4 (4.0) Maximum, supplied with internal spring to return actuator to extended position.		
Temperature Limits	-40°C to +135°C		

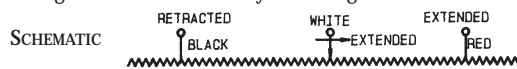
\*Most specifications may be altered to meet specific requirements.

# 700 SERIES LINEAR POSITION SENSORS



700 Series Linear Position Sensors provide accurate and reliable performance in high-temperature and high-pressure environments. Designed to operate reliably in such extreme environments as "down hole" oil well applications with temperatures reaching up to 550°F and pressures to 28,000psi, these specialized units feature nickel-plated aluminum housings available in a variety of styles to meet specific mounting and interface requirements. The housing can be vented for immersion in fluids.

For use in confined spaces such as small-diameter casings and cylindrical shafts, the 700 Series is offered in two miniature diameters of 3/8" and 1/2", and may be specified in electrical travel lengths from 1" to 6". Models feature threaded stainless steel shafts and are available with threaded housings or slotted flanges to serve as stationary mounting ends.



## ELECTRICAL SPECIFICATIONS

Electrical Travel: 1 inch min. to 6 inch max.  
 Total Resistance: Standard Range 2K to 10K per inch  
 Extended Range 1K to 20K per inch  
 Resistance Tolerance:  $\pm 25\%$   
 Accuracy Over Usable Range: (Independent Linearity see note 2)  
 Standard  $\pm 0.020$  inch  
 Best  $\pm 0.005$  inch  
 Power Rating @ 175°C: 0.25 watt per inch  
 (Derated to .10 watts @ 250°C)

Output Smoothness: 0.1%  
 Insulation Resistance @ 250VDC: 1000 megohms  
 Dielectric Strength: 250VRMS  
 Temperature Range: -40° to +250°C

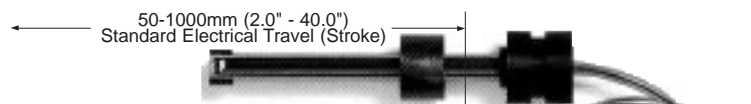
## MECHANICAL SPECIFICATIONS

Mechanical Travel: Electrical travel + 0.2 inch min.  
 Actuation Force: 2oz. max.  
 Repeatability: Within .001 inch  
 Life:  $5 \times 10^6$  cycles  
 Leads: jacketed/shielded cable.

## NOTES:

- Dimensions are in inches. Tolerance:  $\pm .010$
- Consult factory for clarification of independent linearity vs. absolute accuracy.

# 6000 SERIES INTERNAL POSITION TRANSDUCERS



6300 Series Internal Position Sensors provide an immediate solution to external mounting limitations and environmental hazards, including operating temperature ranges of -40° to 125°C. Ideal for high-velocity cylinder applications exceeding 2000mm/second (hydraulic) or 5000mm/second (pneumatic). Mechanical life exceeds one million meters, depending on fluid. Compactly designed with a maximum cross-section of 1" dia. (removable contact assembly) and rigid I-beam design. Six interface styles including pressure and non-pressure headers, leadwire or connector are available. Contact factory for detailed specifications.

## ELECTRICAL SPECIFICATIONS

Resistance Tolerance:  $\pm 20\%$   
 Power Rating at 70°C:  
 0.5 watts per 50mm of electrical travel  
 (Derated to 0 watts at 125°C)  
 Output Smoothness:  
 0.1% of total applied voltage  
 Insulation Resistance at 250VDC:  
 50 megohms min.

Temperature Range:  
 -40° to +125°C

Dielectric:  
 250VDC

## MECHANICAL SPECIFICATIONS

Actuation Force:  
 0.56 Newtons max.  
 Repeatability:  
 Within 0.13mm  
 Life (Meters of Contact Travel):  
 $1.0 \times 10^6$

Model	6301	6303	6305	6308	6312	6316	6320
Total Electrical Travel (mm)*	50	150	250	400	600	800	1,000
Resistance K $\Omega$ ( $\pm 20\%$ )	4	12	20	32	48	64	80
Linearity Over Active Electrical Travel ( $\pm \%$ )	0.75	0.25	0.15	0.10	0.065	0.047	0.038

\*Other standard electrical travels available in 50mm increments.