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Miniature Spring Return Linear Motion Position Sensor

9600 Series

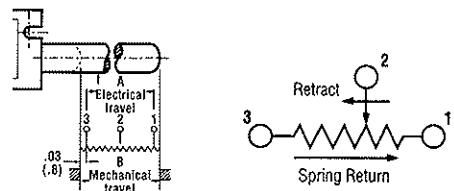
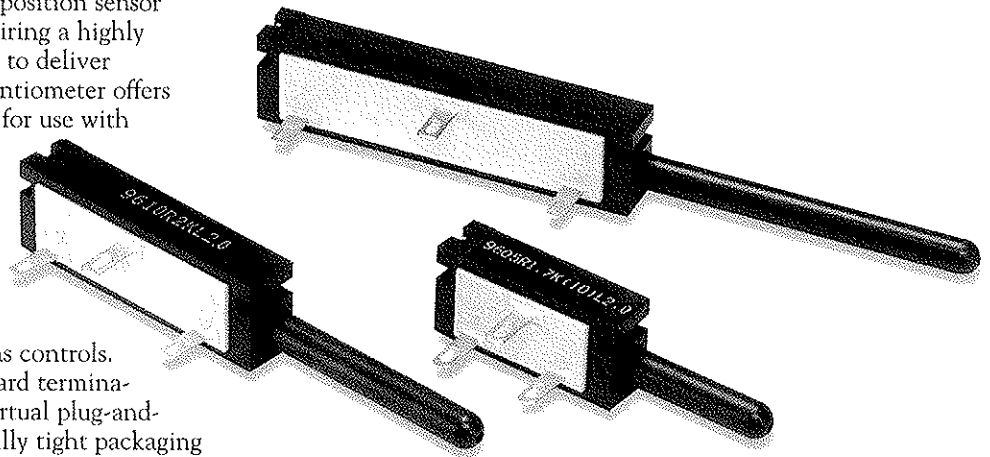
Offering one of the smallest form factors available, the 9600 Series spring return linear motion position sensor is ideal for a variety of applications requiring a highly miniaturized solution. Reliably designed to deliver precision feedback, this innovative potentiometer offers a low-cost solution that is ideally suited for use with microprocessor-based systems, including joystick controls, robotics and industrial automation and controls.

An integral slider/contact assembly assures smooth, noise-free travel over the unit's proprietary infinite resolution element to complement sensitive systems controls. Compatible with leading industry-standard terminations, the 9600 is designed to provide virtual plug-and-play installation simplicity. For abnormally tight packaging constraints, a new 0.15" (3.8mm) short length terminal tab configuration is available. Durably made of high-temperature stable materials, the 9600 Series offers a highly ruggedized design where reliability in a harsh environment is a primary consideration.

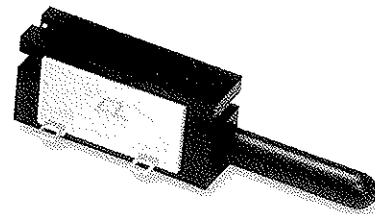
Ideal for volume use and replacement of other rotary or linear feedback devices, all standard 9600 models are available immediately from stock. Special electrical and mechanical performance characteristics and packaging configurations are available.

Benefits:

- Miniature size ideal for tight spaces
- Spring return design allows interface-free installation
- 0.50" to 1.50" electrical travel models for design versatility
- Accepts industry-standard flat terminals; ultra short terminal style available
- Long operating life 2 million cycles (5 million dither cycles)



With precision electrical travel as short as 0.5" (12.7mm) and a spring return shaft that follows the surface of the moving assembly, the 9600 can operate in extremely tight spaces, requiring no additional components for interface.



Short 0.15" (3.8mm) terminal option is ideal for abnormally tight packaging constraints.

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9600 Series Miniature Linear Motion Position Sensor



ACTUAL SIZE
 (0.5" stroke unit, Model 9605)

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 (Fig. 1) | 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 ¹ | \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 0.15 (\pm 0.4) (C) inches (mm) | 1.06 (26.9) | 1.56 (39.6) | 2.06 (52.3) |
| Terminal Spacing: (D) inches (mm) (E) inches (mm) | 0.30 (7.6) 0.20 (5.1) | 0.50 (12.7) 0.50 (12.7) | 0.80 (20.3) 0.70 (17.8) |
| Fully Extended Length \pm 0.15 (0.4) (F) inches (mm) | .810 (20.6) | 1.310 (33.3) | 1.810 (46.0) |
| Terminal Length (G) inches (mm) Long Short "S" Option | .280 (7.1) .150 (3.8) | .280 (7.1) .150 (3.8) | .280 (7.1) .150 (3.8) |
| 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. | | |
| Humidity | 95% @ 38°C | | |
| Vibration | 15Gs, 50 to 1,000Hz, 2hrs. each plane | | |
| Shock | Up to 50Gs | | |
| Temperature Limits | -40°C to 135°C | | |

*Most specifications may be altered to meet specific requirements.

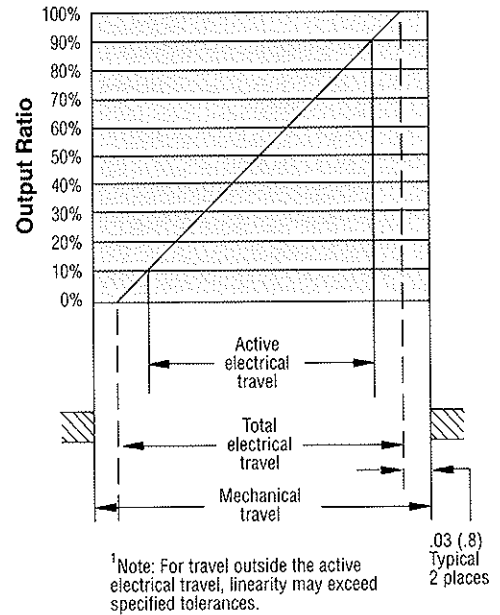
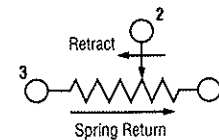
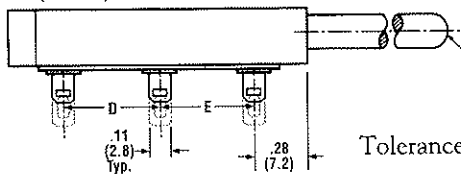


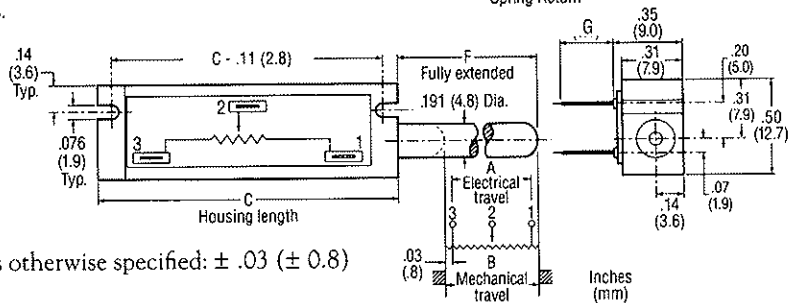
Fig. 1



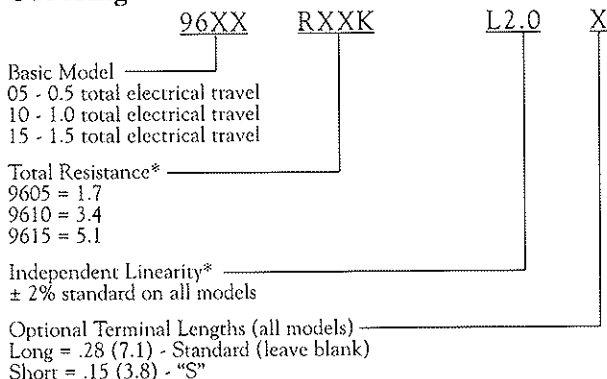
2 Terminal Pin Lengths Available
 (See G)



Tolerances unless otherwise specified: \pm .03 (\pm 0.8)



Ordering Information



*Consult Factory for availability of special resistance and linearity requirements.