

The NewTek R Series AC LVDTs satisfy numerous applications in which LVDT performance and reliability are required. These linear displacement sensors are available in ranges of  $\pm 0.50$  inch ( $\pm 1.27$ mm) to  $\pm 10$  inches. Sensor construction consists of a coil assembly potted and mechanically swaged into a  $3/4$  inch (19mm) diameter housing with a separate moving core. The  $1/4$  inch (6.35mm) diameter core allows a radial clearance of  $1/16$  inch (1.58mm) between the movable core and the bore of the coil assembly. The large core-to-bore radial clearance provides for ample installation misalignments. The R Series can be designed with a number of standard options including mild radiation resistance, teflon bore, metric threaded core and high temperature (400°F).

## Features

- Rugged  $3/4$  inch stainless steel housing
- Measurement ranges from  $\pm 0.05$  to  $\pm 10$  inches
- Linearity  $\pm 0.15\%$  of Full Range Typical
- Shock and vibration tolerant
- Wide operating temperature range (-65°F to 275°F)
- Choice of imperial or metric threaded core
- Standard and custom models available

## Applications

- Factory Automation
- Food process control
- Materials testing
- Fluid level measurement

## Electrical Specifications

**Input Voltage:** 3 Vrms (Nominal)

**Input Frequency:** 400Hz to 10KHz

**Linearity:**  $< \pm 0.15\%$  Full Range Typical

**Extended Operating Range:** 1.5 X Linear Range

**Null Voltage:** 0.5% Full Range

**Hysteresis:**  $< 0.01\%$  of Full Range Typical

**Repeatability:**  $< 0.01\%$  of Full Range Typical



## Environmental Specifications

**Operating Temperature:** -65° F to 275° F (-55° C to 135° C)

**Thermal Coefficient:**  $< -0.01\%/^{\circ}\text{F}$  ( $< -0.02\%/^{\circ}\text{C}$ ) of Full Range

**Humidity:** 90% R.H., 240 Hours

**Shock Survival:** 1000 g, 11 ms

**Vibration:** 20 g to 2 KHz

## Materials Specifications

**Housing:** Corrosion-resistant nickel-iron alloy

**Core:** Hi-permeability nickel-iron alloy

**Coil Form:** Ceramic/Plastic

**Magnet Wire:** Film insulated copper

**Lead Wires:** # 28 AWG Teflon insulated, 12" long

**NewTek Sensor Solutions, LLC**

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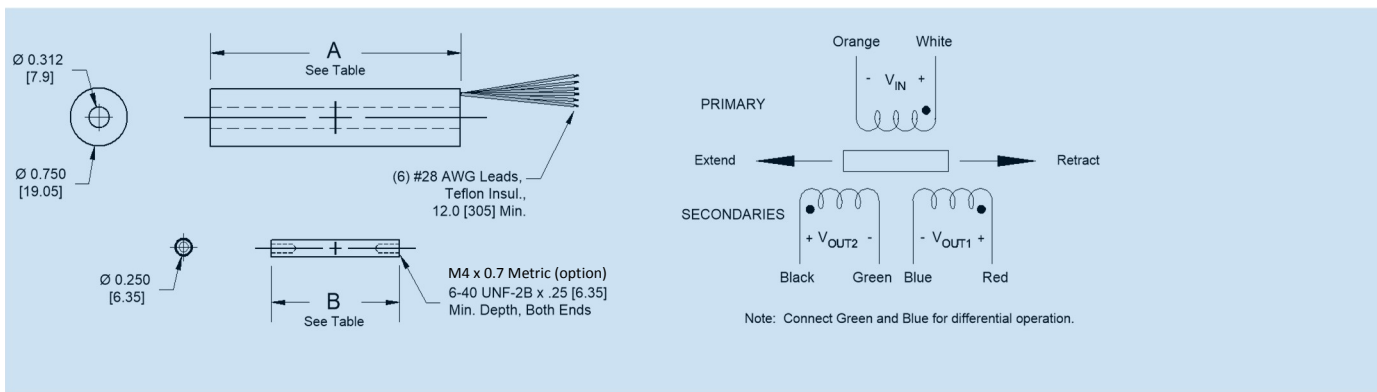
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## Specifications

| Model                        | NT-R-750-50 | NT-R-750-100 | NT-R-750-200 | NT-R-750-500 | NT-R-750-1000 | NT-R-750-2000 | NT-R-750-3000 | NT-R-750-4000 | NT-R-750-5000 | NT-R-750-7500 | NT-R-750-10000 |
|------------------------------|-------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| <b>Parameter</b>             |             |              |              |              |               |               |               |               |               |               |                |
| Nominal Range (Inches)       | ± 0.050     | ± 0.100      | ± 0.200      | ± 0.500      | ± 1.00        | ± 2.00        | ± 3.00        | ± 4.00        | ± 5.00        | ± 7.5         | ± 10.00        |
| Nominal Range (mm)           | ± 1.25      | ± 2.5        | ± 5.0        | ± 12.5       | ± 25          | ± 50          | ± 75          | ± 100         | ± 125         | ± 190         | ± 250          |
| Sensitivity (mV/V/.001 Inch) | 6.6         | 4.2          | 2.5          | 0.70         | 0.72          | 0.40          | 0.30          | 0.20          | 0.15          | 0.19          | 0.09           |
| Sensitivity (mV/V/mm)        | 264         | 168          | 100          | 28           | 29            | 16            | 12            | 8             | 6             | 7.6           | 3.6            |
| Primary Impedance (Ω)        | 410         | 1010         | 1910         | 1410         | 1660          | 1885          | 1960          | 435           | 1060          | 1390          | 1060           |
| Dimension "A" (inches)       | 1.15        | 1.8          | 2.55         | 5            | 6.50          | 10.00         | 12.70         | 15.00         | 17.70         | 22.75         | 30.75          |
| Dimension "B" (inches)       | 0.80        | 1.25         | 1.65         | 3.45         | 3.45          | 5.30          | 6.20          | 6.20          | 6.20          | 7.00          | 9.50           |
| Body Weight (grams)          | 29          | 41           | 45           | 82           | 105           | 140           | 215           | 275           | 330           | 475           | 580            |
| Core Weight (grams)          | 4.2         | 6.0          | 8.2          | 20.2         | 20.2          | 35.0          | 41.8          | 41.8          | 41.8          | 43.0          | 63.0           |

## Dimensions and Wiring



## Ordering Info

**NT - R - 750 - xxx - xxx**

General Purpose LVDT Series

Range (See Table)

Options

- M : Metric threaded core
- S : Small diameter core
- R : Mild radiation resistant
- T : Teflon bore liner

## Notes

- Electrical specifications measured at 3KHz excitation frequency.
- Additional options are available. Please consult factory for custom designs.
- Specifications subject to change.

## Warranty

NewTek products are warranted against defective materials and workmanship for a period of one year from the date of delivery to the original purchaser. NewTek accepts no liability for damages in the misuse of our products.



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