

The NewTek R-812 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 0.812 inch (20.6mm) diameter housing with a separate moving core. The  $\frac{1}{4}$  inch (6.35mm) diameter core allows a radial clearance of  $\frac{1}{16}$  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-812 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 0.812 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

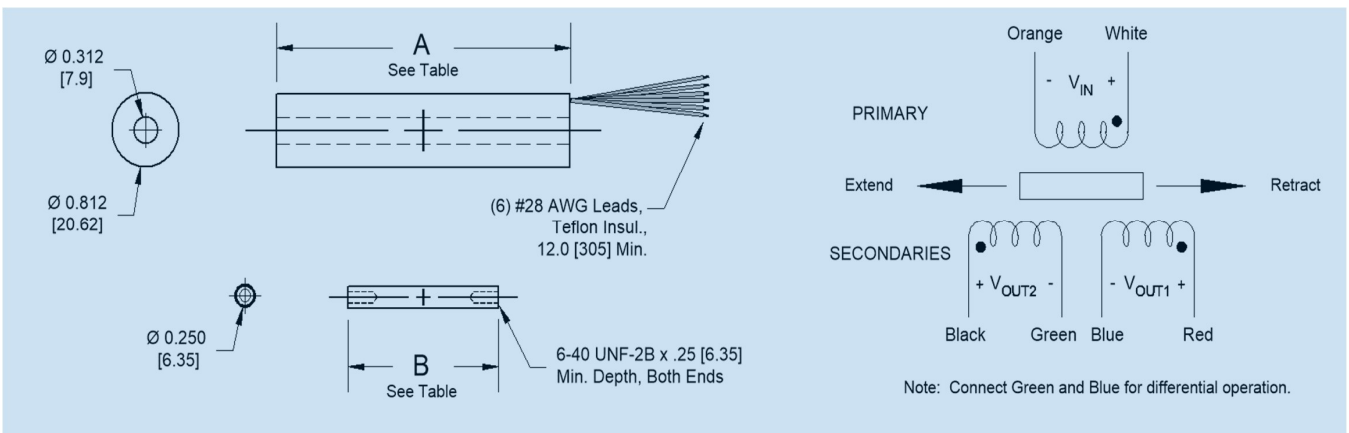
**Magnet Wire:** Film insulated copper

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

**Specifications**

Model	NT-R-812-50	NT-R-812-100	NT-R-812-200	NT-R-812-500	NT-R-812-1000	NT-R-812-2000	NT-R-812-3000	NT-R-812-4000	NT-R-812-5000	NT-R-812-7500	NT-R-812-10000
<b>Parameter</b>	50	100	200	500	1000	2000	3000	4000	5000	7500	10000
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 – 812 – xxx – xxx**

General Purpose LVDT Series

Range (See Table)

Options  
 – H : 400°F Temperature  
 – R : Mild Radiation Hardened  
 – L : ≤ 0.1% Linearity  
 – M : Metric Threads  
 [none]: Standard Product

**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 warrantied 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.