

The NewTek HATR Series sensors are rugged hermetically sealed high temperature AC LVDTs with excellent linearity, high sensitivity and infinite resolution. These sensors are constructed of 3/4 inch diameter stainless steel and manufactured for general industrial use. Electrical connection is made through a radially mounted connector, resulting in a reduced housing length. Designed for a wide range of position measurement applications, they are available in ranges of  $\pm 0.05$  inch (1.27mm) to  $\pm 10$  inches (250mm). The HATR Series windings are potted inside the housing with a 2 component epoxy, providing excellent protection against hostile environments.

## Features

- Welded 3/4 inch hermetically sealed steel housing
- Radially mounted connector
- 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 400°F)
- Standard and custom models available

## Applications

- Factory automation
- Materials testing
- Packaging equipment
- Valve position sensing
- Corrosive environments

## Electrical Specifications

- Input Voltage:** 3 Vrms (Nominal)  
**Input Frequency:** 400Hz to 10KHz  
**Linearity:**  $< \pm 0.15\%$  Full Range Typical  
**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 400° F (-55°C to 200°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

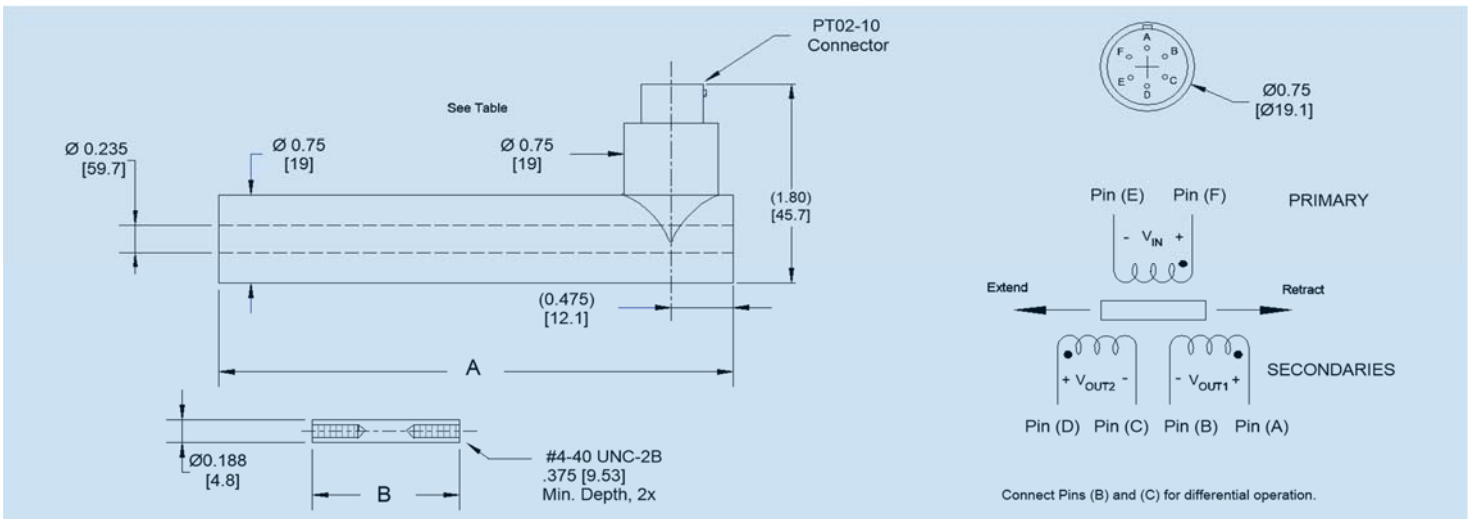
## Materials Specifications

- Housing:** Corrosion-resistant nickel-iron alloy  
**Core:** Hi-permeability nickel-iron alloy  
**Magnet Wire:** Film insulated copper  
**Connector:** PT02A-10-6P

## Specifications

Model	NT-HATR-750 - 050	NT-HATR-750 - 125	NT-HATR-750 - 250	NT-HATR-750 - 500	NT-HATR-750 - 1000	NT-HATR-750 - 2000	NT-HATR-750 - 3000	NT-HATR-750 - 4000	NT-HATR-750 - 5000	NT-HATR-750 - 7500	NT-HATR-750 - 10000
Parameter											
Nominal Range (Inches)	± .050	± 0.125	± 0.25	± 0.5	± 1	± 2	± 3	± 4	± 5	± 7.5	± 10
Nominal Range (mm)	± 1.27	± 3.0	± 6.3	± 12.5	± 25.0	± 50.0	± 75.0	± 100.0	± 125.0	± 190.0	± 250.0
Sensitivity (mV/V/.001 inch)	6.0	4.0	2.5	0.64	0.6	0.40	0.25	0.17	0.12	0.11	0.08
Sensitivity (mV/V/mm)	238	158	98	25	24	16	10	7.0	4.7	4.3	3.1
Primary Impedance (Ω)	330	740	1330	1200	1260	2150	2150	425	600	777	625
Dimension " A " (inches)	2.00	2.60	3.33	5.90	7.40	10.90	13.70	16.20	18.65	23.90	31.65
Dimension " B " (inches)	0.80	1.25	1.70	3.50	3.50	5.35	6.20	6.20	6.20	7.00	9.50
Body Weight ( ounces)	0.07	0.11	2.40	3.30	4.30	6.60	6.60	9.20	10.00	14.40	18.20
Body Weight ( grams)	2	3	68	94	122	180	230	261	280	408	516

## Dimensions and Wiring



## Ordering Info

**NT – HATR – 750 – XXX – XXX**

Hermetically Sealed High Temperature LVDT Series

Range (See Table)

Options

- R : Mild Radiation Hardened
- L : ≤ 0.1% Linearity
- M : Metric Threads
- [none]: Standard Product

## Notes

- Electrical specifications measured at 3KHz excitation frequency.
- Additional options available (high pressure, alternate connector etc.). 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.

