PTL-TSD-HR LVDT Probe



Specifications

High reliability

Large core-to-bore clearance

Ranges from ±1 mm to ±254 mm

AC driven, 400 Hz to 5 KHz

Stainless steel housing

Inch threads standard; metric threads optional

Features

- Linearity ±0.25%
- Core-to-bore clearance up to 1.6 mm
- Shock and vibration resistant
- Wide temp range; 220°C version optional
- Internal shielding with electrostatic and electromagnetic screens

Applications

- Process control
- Factory automation
- Material testing
- Length metrology transfer
- Applications where alignment is difficult
- General industrial applications

The PTL-TSD-HR is a dimensional measurement probe based on the Linear Variable Differential Transformer (LVDT) principle. It outputs a highly repeatable voltage proportional to displacement for high-precision, high-repeatability measurement in quality control and metrology applications.

The core and windings have no mechanical contact, ensuring a very long service life. The 1.6 mm core-to-bore clearance makes installation and use easier. Ranges span from ±1 mm to ±254 mm, with many standard options including guide rods, small-diameter cores, high-temperature versions and light radiation resistance.

In the PTL-TSD-HR series, the windings are vacuum-impregnated with a special high-temperature flexible resin formulation, and the coil assembly is epoxy-potted and sealed. This provides improved resistance to high humidity, vibration and shock in harsh environments.

Material Parameters

Housing: corrosion-resistant stainless steel

Core: high-stability nickel-iron alloy

Winding: ceramic quartz / plastic

Magnet wire: coated copper wire

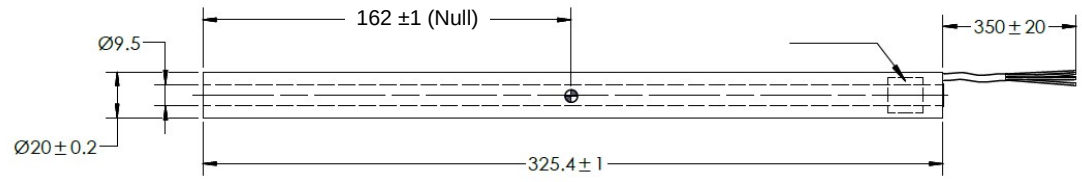
Performance Specifications

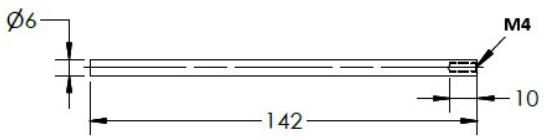
Parameter PTL-TSD	HR 050	HR 100	HR 200	HR 300	HR 500	HR 1000	HR 2000	HR 3000	HR 10000
Range (mm)	±1.27	± 2.54	±5.08	±7.62	±12.7	±25.4	±50.8	±76.2	±254
Sensitivity (mV/V/mm)	228	165	98.4	51.2	27.6	15.4	9.1	9.8	2.8
End-of-Stroke Output mV/V	290	420	500	390	350	390	460	750	700
Phase Shift	-1°	-5°	-4°	-11°	-1°	-3°	+5°	+11°	-5°
Input Impedance (Primary) Ohm	430	1070	1150	1100	460	460	330	315	550
Output Impedance (Secondary)	4000	5000	4000	2700	375	320	300	830	750
Non-linearity	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%
Input Voltage	3 VRMS sine wave								
Input Frequency	400 Hz to 5 KHz								
Test Frequency	2.5KHz								
Zero Output	FRO 0.5% max								

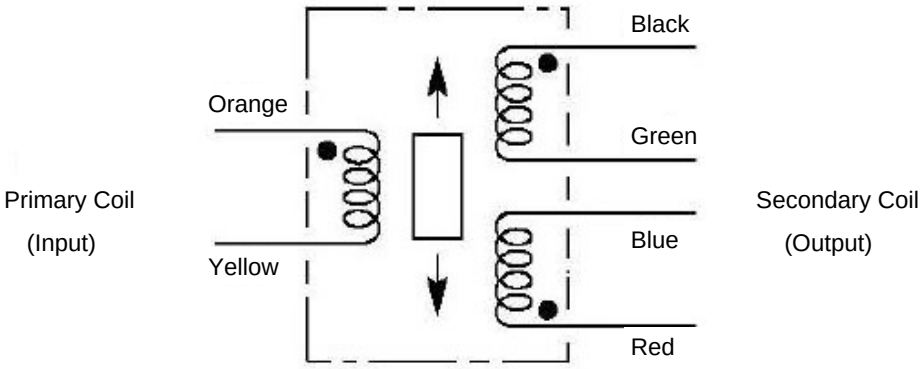
Environmental Specifications and Materials

Operating Temperature	-55°C ~ 150°C
Shock Acceleration	1000 g (11 ms half-sine)
Vibration Tolerance	20 g max at 2 KHz
Housing Material	Stainless Steel
Electrical Connection	6 flying leads, 28 AWG copper wire, PTFE insulated
Protection Rating	IP61

HR3000 Dimension Drawing







Connect blue (BLU) to green (GRN) for differential output

Ordering Information

PTL-TSD-HR **-XXX**

Analog Output LVDT

Range	mm
-050	±1.27
-100	±2.54
-200	±5.08
-300	±7.62
-500	±12.7
-1000	±25.4
-2000	±50.8
-3000	±76.2
-10000	±254

Warranty

KMBT products are warranted for one year from the date of shipment. Warranty does not cover product misuse; however, paid repair service is available.

Contact Information

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