

HR Series

General Purpose LVDT

The high reliability HR Series of LVDTs is suitable for most general applications. The HR Series features a large core-to-bore clearance, high output voltage over a broad range of excitation frequencies, and a magnetic stainless steel case for electromagnetic and electrostatic shielding.

Features

- Optimum performance for a majority of applications**
- Large 1/16 inch radial core-to-bore clearance**
- Calibration certificate supplied with all models**
- Compatible with all Schaevitz® signal conditioners**
- High temperature (220° C) and high pressure (vented case) available – consult factory**

Applications

- General**

Options

- 5.0 kHz excitation frequency testing***
- Metric thread core**
- Guided core**
- Small diameter/low mass core**
- Mild radiation resistance (withstands 10¹² NVT total integrated flux; 10⁷ rads Gamma)**

* Performance and electrical specifications for alternative frequencies will differ from the standard specifications listed below which are based on a 2.5 kHz excitation frequency. Consult factory for further information.



Specifications

Input Voltage	3 V rms (nominal)
Frequency Range	400 Hz to 5 kHz
Operating Temperature Range ...	-65°F to 300°F (-55°C to 150°C)
Null Voltage	<0.5% full scale output
Shock Survival	1,000 g for 11 msec
Vibration Tolerance	20 g up to 2 kHz
Coil Form Material	High density, glass-filled polymer
Housing Material	AISI 400 series stainless steel
Lead Wires	28 AWG, stranded copper, Teflon-insulated, 12 inches (300 mm) long (nominal)

Performance and Electrical Specifications @ 2.5 kHz¹

HR Series Model Number	Nominal Linear Range		Linearity (±% full range)				Sensitivity mV out/V in Per		Impedance Ohms		Phase Shift Degrees
	inches	mm	50	100	125	150	0.001 in	mm	Pri	Sec	
050 HR	±0.050	±1.27	0.10	0.25	0.25	0.50	5.8	230	430	4000	-1
100 HR	±0.100	±2.54	0.10	0.25	0.25	0.50	4.2	165	1070	5000	-5
200 HR	±0.200	±5.08	0.10	0.25	0.25	0.50	2.5	91	1150	4000	-4
300 HR	±0.300	±7.62	0.10	0.25	0.35	0.50	1.3	51	1100	2700	-11
500 HR	±0.500	±12.70	0.15	0.25	0.35	0.75	0.7	25.6	460	375	-1
1000 HR	±1.00	±25.4	0.15	0.25	1.00	1.30*	0.39	14.2	460	320	-3
2000 HR	±2.00	±50.8	0.15	0.25	0.50*	1.00*	0.23	8.3	330	330	+5
3000 HR	±3.00	±76.2	0.15	0.25	0.50*	1.00*	0.25	9.1	315	830	+11
4000 HR	±4.00	±101.6	0.15	0.25	0.50*	1.00*	0.20	7.1	275	550	+1
5000 HR	±5.00	±127.0	0.15	0.25	1.00*	n/r	0.14	5.5	310	400	+3
7500 HR	Now available — Contact factory for details										
10000 HR	±10.0	±254	0.15	0.25	1.00*	n/r	0.07	2.8	550	750	-5

¹ All calibration is performed at room ambient temperature.
* Requires special reduced core length.

How to Order

Specify the HR Model followed by the desired option number(s) added together.

Ordering Example:

Model Number 050 HR-018 is an HR Series LVDT with a $\pm 0.05''$ range (050 HR), with 5 kHz testing (002), Metric thread core (006), and a guided core (010).

HR Model

050 HR
100 HR
200 HR
300 HR
500 HR
1000 HR
2000 HR
3000 HR
4000 HR
5000 HR
10000 HR

Options

Number	Description
002	5.0 kHz Linearity Test ¹
006	Metric Thread Core
010	Guided Core ²
020	Small Diameter/Low Mass Core ³
080	Radiation Resistance ²

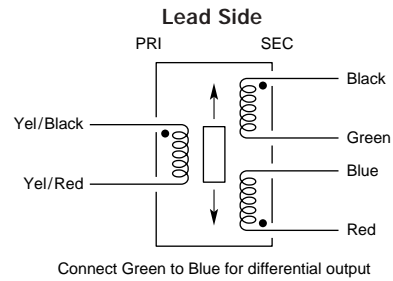
¹Available on models 050 HR, 100 HR, 200 HR, and 500 HR only.

²Guided core and radiation resistance options cannot be ordered together.

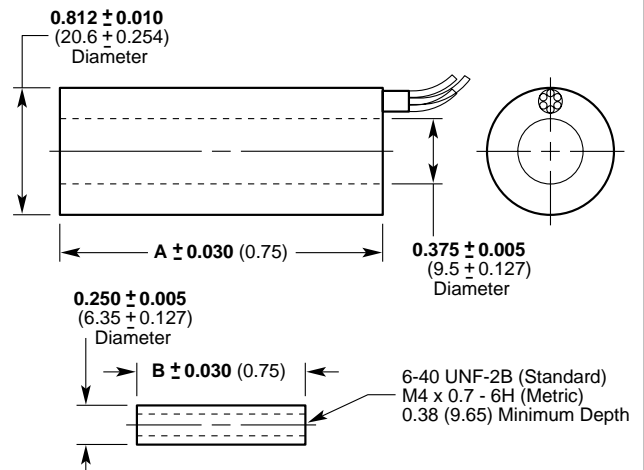
³Available on models 050 HR - 500 HR only.

Consult factory for mass, dimensions and thread size.

Wiring



Dimensions in (mm)



Mechanical Specifications

HR Series Model Number	Weight				Dimensions			
	Body		Core		A (Body)		B (Core)	
	oz	gm	oz	gm	in	mm	in	mm
050 HR	1.13	32	0.41	4	1.13	28.7	0.80	20.3
100 HR	1.69	48	0.21	6	1.81	46.0	1.30	33.0
200 HR	1.93	60	0.28	8	2.50	63.5	1.65	41.9
300 HR	2.72	77	0.35	10	3.22	81.8	1.95	49.5
500 HR	3.85	109	0.64	18	5.50	139.7	3.45	87.6
1000 HR	4.45	126	0.74	21	6.63	168.4	4.00	101.6
2000 HR	5.93	168	0.95	27	10.00	254.0	5.30	134.6
3000 HR	7.94	225	0.99	28	12.81	325.4	5.60	142.2
4000 HR	10.41	295	1.27	36	15.64	397.3	7.00	177.8
5000 HR	11.99	340	1.27	36	17.88	454.2	7.00	177.8
10000 HR	20.56	580	1.52	43	30.84	783.3	8.50	215.9