

HR

Schaevitz™ General Purpose LVDT

- Measurement ranges from ± 1.27 mm to ± 254 mm
- LVDT
- Linearity 0.25 % at 100 % stroke
- Output signal 2.8 ... 228 mV/V per mm
- Supply voltage 3 V_{rms}



The HR Series general purpose LVDTs provide the optimum performance required for a majority of applications. The large 1/16 inch [1.6 mm] bore-to-core radial clearance provides for ample installation misalignments and therefore reduces the application costs. Featuring a high output voltage and a broad operating frequency range, these versatile and highly reliable LVDTs deliver worry-free and precise position measurements.

Available in a variety of stroke ranges from ± 0.05 to ± 10 inches [± 1.27 to ± 254 mm], the HR Series can be configured with a number of standard options including guided core, small diameter/low mass core and mild radiation resistance (10^{12} NVT total integrated flux; 10^7 rads Gamma). High temperature operation ($+220$ °C) and high pressure (vented case) versions are also available (consult factory).

■ Options:

- 5.0 kHz excitation frequency testing
- Metric thread core
- Guided core
- Small diameter/low mass core
- Mild radiation resistance (withstands 10^{12} NVT total integrated flux; 10^7 rads gamma)

■ Specifications

Supply voltage	3.0 V _{rms}
Frequency range	400 Hz ... 5 kHz
Operating temperature	-55 ... +150 °C
Null voltage	<0.5 % FSO
Shock survival	1000 g (11 ms half sine)
Vibration tolerance	20 g up to 2 kHz
Housing material	AISI 400 series stainless steel
Lead wires	Six lead-wires, 28 AWG stranded copper, PTFE insulated, 0.3 m long

■ Performance and Electrical Data at 2.5 kHz**

Model number	Stroke range		Sensitivity mV/V per		Output at stroke ends mV/V	Linearity at stroke % FS				Impedance		Phase shift °
	inch	mm	0.001 in	mm		50%	100%	125%	150%	Pri Ohm	Sec Ohm	
050 HR	± 0.05	± 1.27	5.8	228	290	0.10	0.25	0.25	0.50	430	4000	-1
100 HR	± 0.1	± 2.54	4.2	165	420	0.10	0.25	0.25	0.50	1070	5000	-5
200 HR	± 0.2	± 5.08	2.5	98	500	0.10	0.25	0.25	0.50	1150	4000	-4
300 HR	± 0.3	± 7.62	1.3	51	390	0.10	0.25	0.35	0.50	1100	2700	-11
500 HR	± 0.5	± 12.7	0.7	28	350	0.15	0.25	0.35	0.75	460	375	-1
1000 HR	± 1	± 25.4	0.39	15.3	390	0.15	0.25	1.00	1.30*	460	320	-3
2000 HR	± 2	± 50.8	0.23	9.1	460	0.15	0.25	0.50*	1.00*	330	300	-5
3000 HR	± 3	± 76.2	0.25	9.8	750	0.15	0.25	0.50*	1.00*	315	830	-11
4000 HR	± 4	± 101.6	0.20	7.9	800	0.15	0.25	0.50*	1.00*	275	400	-1
5000 HR	± 5	± 127.0	0.14	5.5	700	0.15	0.25	1.00*	na	310	400	-3
7500 HR	± 7.5	± 190.5	0.13	5.1	975	na	0.25	na	na	260	905	-1
10000 HR	± 10	± 254	0.07	2.8	700	0.15	0.25	1.00*	na	550	750	-5

All values are nominal unless otherwise noted

FS: Full Scale is 2X for $\pm X$ stroke

FSO: Full Scale Output is the output at X position for $\pm X$ stroke

* Requires special reduced core length

**Electrical specifications are for the test frequency indicated

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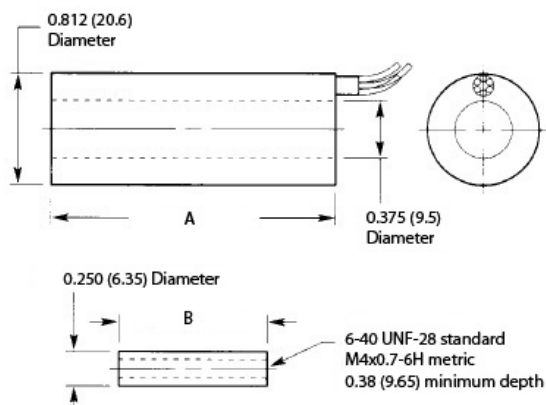
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Mechanical Specifications

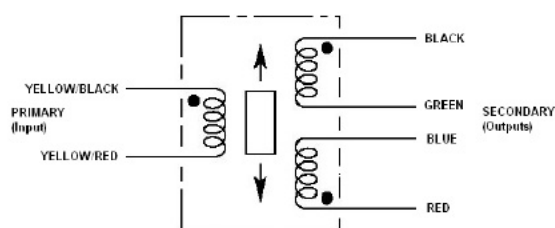


All dimensions in inches, values in brackets in mm, approx. values.

These drawings are for information only and not intended for construction purpose. Please ask for detailed drawings.

Model number	Weight				Dimensions			
	Body		Core		A (body)		B (core)	
	oz	g	oz	g	inch	mm	inch	mm
050 HR	1.13	32	0.14	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	2.12	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	12.82	325.6	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
7500 HR	16.16	458	1.27	36	24.09	611.9	7.00	177.8
10000 HR	20.46	580	1.52	43	30.85	783.6	8.50	215.9

Wiring



Connect green to blue for differential output

Ordering Information

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

Example:

Model 050 HR-008 is a HR series LVDT with a ± 1.27 mm range (050 HR), with 5 kHz testing (002) and metric thread core (006)

Option 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⁾

- (1) Available on models 050 HR, 100 HR, 200 HR and 500 HR only
- (2) Guided core and radiation resistance options cannot be ordered together
- (3) on request

Due to continual product development, ALTHEN and partners reserve the right to vary the foregoing details without prior notice.