

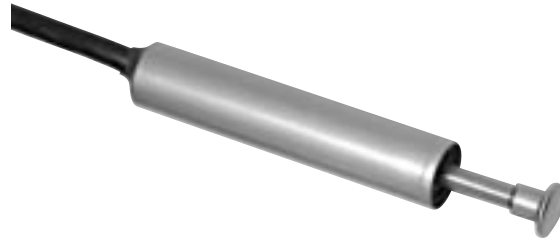
# Series 330

3/8 Inch

AC Gaging LVDTs

# 上海江晶翔电子有限公司

The Series 330 3/8" AC Gaging LVDTs provide precise linear displacement sensing in a compact, spring loaded package. Advanced coil winding techniques are employed to minimize package length and optimize overall performance. Spring forces have been carefully selected to insure the proper balance of mechanical frequency response and tip force. Available in strokes ranging from  $\pm 0.005"$  to  $\pm 1.0"$ , these sensors are ideally suited to material thickness measurements, single or multi-point surface profiling, creep testing, or any other application requiring the use of a small, spring loaded LVDT. These transducers are also an excellent replacement for a standard dial indicator.



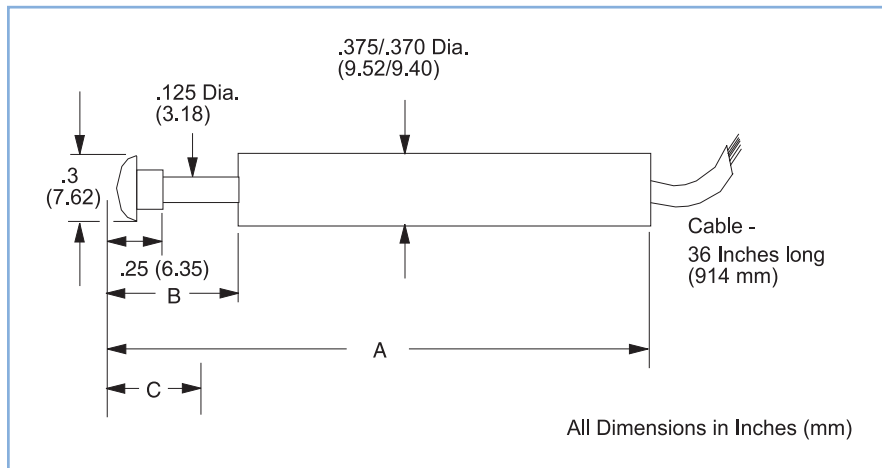
## KEY FEATURES

- Ranges from  $\pm 0.005"$  to  $\pm 1.0"$
- 20 Microlnch Repeatability
- Non-linearity < 0.20%
- Self-Lubricating Bearing

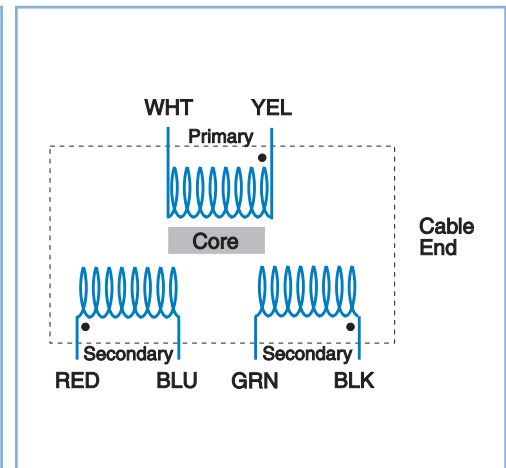
## SPECIFICATIONS - ELECTRICAL (Reference frequency 7.0 KHz)

MODEL	UNITS	0330-0000	0331-0000	0332-0000	0333-0000	0334-0000	0335-0000	0336-0000	0337-0000
LINEAR RANGE	$\pm$ Inches $\pm$ (mm)	0.005 (0.13)	0.01 (0.26)	0.025 (0.64)	0.05 (1.27)	0.1 (2.54)	0.25 (6.35)	0.5 (12.7)	1.0 (25.4)
NON LINEARITY		< $\pm 0.25\%$ Max.			< $\pm 0.20\%$ Max.				
OVERTRAVEL		OUTPUT MONOTONIC OVER ENTIRE MECHANICAL TRAVEL							
TEMPERATURE RANGE		-4°F to +176°F (-20°C to +80°C) (OPERATING)				-65°F to +176°F (-54°C to +80°C) (STORAGE)			
TEMP. COEFFICIENTS		ZERO: < $\pm 0.001\%$ Linear Range/°F				SENSITIVITY: < $\pm 0.01\%$ /°F			
SENSITIVITY	V/in./V $\pm 10\%$	4	4	4	4	4	2	1	0.5
PHASE ANGLE	°	5	5	5	5	5	0	0	0
INPUT IMPEDANCE	Ohms	260	255	250	245	480	320	300	355
INPUT RESISTANCE	Ohms DC	36	36	36	36	60	22	30	40
OUTPUT RESISTANCE	Ohms DC	135	135	135	135	205	210	170	185
NULL VOLTAGE	% V Ex. Max.	0.2	0.25	0.3	0.4	0.8	1	1	1
MAXIMUM EXCITATION		15 VRMS							

## DIMENSIONAL DRAWING



## SCHEMATIC



### SPECIFICATIONS - MECHANICAL

MODEL	UNITS	0330-0000	0331-0000	0332-0000	0333-0000	0334-0000	0335-0000	0336-0000	0337-0000
TOTAL LENGTH A	Inches (mm)	2.45 (62.2)	2.45 (62.2)	2.45 (62.2)	2.45 (62.2)	2.93 (74.4)	5.35 (136)	6.86 (174)	10.45 (265)
SHAFT EXTENSION B	Inches (mm)	0.65 (16.5)	0.65 (16.5)	0.65 (16.5)	0.65 (16.5)	0.83 (21.1)	1.22 (30.9)	1.69 (42.9)	2.60 (66.0)
NULL POSITION C	Inches (mm)	0.1 (2.54)	0.1 (2.54)	0.1 (2.54)	0.1 (2.54)	0.15 (3.81)	0.35 (8.89)	0.57 (14.5)	1.15 (29.2)
SPRING FORCE @ NULL	Lbs.	0.73	0.73	0.73	0.73	1.07	0.74	0.57	0.70
FREQ. RESPONSE	Hz	250	180	110	75	45	18	6	4

### ACCESSORIES

PART NUMBER	DESCRIPTION
A002-0041	Adapter for alternate contact tips: 5-60 Thread to 4-48 UNF-2B Thread
G000-0000	Contact Tip, AGD #7
G000-0008	Contact Tip, .30" Spherical O.D.; 5-60 Internal Threads. (Included with transducer)

### DC-DC OPERATION WITH OPTIONAL OSCILLATOR/DEMODULATOR

To facilitate prototyping, or in instances where the preference is a DC in - DC out system, any of the standard or High Temperature Series 330 can be used in conjunction with the Model 1000-0014 Oscillator/Demodulator. Designed to work together, the DC system gives the same level of performance as provided by the AC LVDT alone. The high level DC output voltage can be directly interfaced with analog circuits as well as data acquisition

cards, PLCs, or A/D converters. Provisions for customizing the Model 1000-0014 to provide zero offsets and nonstandard gains allow a simple and cost effective method of tailoring a system to meet individual customer requirements. Detailed connection information can be found in the Accessories portion of this catalog.

### SYSTEM SPECIFICATIONS *(Combined Performance of LVDT and 1000-0014)*

MODEL	UNITS	0330-0000	0331-0000	0332-0000	0333-0000	0334-0000	0335-0000	0336-0000	0337-0000
SIGNAL OUTPUT	±VDC	0.2	0.4	1.0	2.0	4.0	5.0	5.0	5.0
OUTPUT CURRENT		±3 mA without distortion							
OUTPUT RIPPLE	VRMS	0.004	0.008	0.02	0.03	0.03	0.03	0.03	0.03
POWER INPUT		±14.5 to ±28 VDC @ ±100 mA Max., Input polarity protected							
TEMPERATURE RANGE	1000-0014	+32°F to +158°F (0°C to +70°C) (Operating)				-65°F to +257°F (-54°C to +125°C) (Storage)			
TEMP. COEFFICIENTS	1000-0014	Zero < ±0.00035 VDC/°F				Sensitivity < ±0.02%/°F			

### HIGH TEMPERATURE VERSION: -65°F to +400°F (-55°C to +204°C)

The High Temperature version of the Series 330 is identical to the standard version except for the following:

- Operating Temperature is -67°F to +400°F (-55°C to +204°C);
- Units terminate in six #30 AWG Teflon insulated leads (3 ft. long);
- Some materials such as the epoxy, solder, and magnet wire have been replaced by their high temperature equivalents;
- Electrical characteristics of certain units have been changed as described in the accompanying table.

MODEL #	STROKE ±Inches (mm)	PHASE ANGLE Degrees	INPUT IMPEDANCE Ohms	INPUT RESISTANCE Ohms	OUTPUT RESISTANCE Ohms
0330-0001	0.005 (6.35)	No Change	No Change	No Change	No Change
0331-0001	0.010 (12.7)	No Change	No Change	No Change	No Change
0332-0001	0.025 (6.35)	No Change	No Change	No Change	No Change
0333-0001	0.05 (12.7)	No Change	No Change	No Change	No Change
0334-0001	0.10 (25.4)	No Change	No Change	No Change	No Change
0335-0001	0.25 (6.35)	6	315	17	285
0336-0001	0.50 (12.7)	6	325	22	230
0337-0001	1.00 (25.4)	7	450	45	275

Note: All electrical and physical specifications are the same as the standard Series 330 LVDTs.