

LCIT Series – OEM Linear Position Transducer



- Low cost, DC operated
- Non-contacting technology
- +0.5 to +4.5VDC output
- Stroke ranges from ± 0.125 to ± 2 inches
- 0.25% linearity
- High 1kHz frequency response
- Low mass spoiler
- Stainless steel housing

DESCRIPTION

The LCIT Series DC operated linear position transducers are based on a patented design that features all of the benefits of current LVDT inductive technology, but at a significantly lower cost. Utilizing a simplified coil design and a low-mass conductive spoiler which replaces the traditional ferromagnetic core, the LCIT bridges the gap between price and performance for volume applications.

Like in an LVDT, there is no physical contact between the movable spoiler and the coil structure, thus making the LCIT a frictionless device while offering excellent resolution and repeatability characteristics. The high frequency response of the electronics and the low mass of the spoiler make the LCIT sensor ideal for dynamic applications.

Operating on a wide range of supply voltages (+7 to +36VDC), the LCIT Series delivers an extremely linear and low noise +0.5 to +4.5VDC output. A rugged stainless steel housing and solid internal construction ensures excellent tolerance to shock and vibration.

Like in most of our LVDTs, the LCIT windings are vacuum impregnated with a specially formulated, high temperature, flexible resin, and the coil assembly is potted inside its housing with a two-component epoxy. This provides excellent protection against hostile environments such as high humidity, vibration and shock.

Also see our other position transducer models with built-in signal conditioning: DC-EC ($\pm$ DC voltage), DC-SE (single-ended DC voltage), HCD ($\pm$ DC voltage), HC-485 (RS485 digital output), and the HCT-IS (Intrinsically safe, 4-20mA, 2-wire loop).

Measurement Specialties, Inc. (NASDAQ MEAS) offers many other types of sensors and signal conditioners. Data sheets can be downloaded from our web site at: <http://www.meas-spec.com/datasheets.aspx>

MEAS acquired Schaevitz Sensors and the **Schaevitz**® trademark in 2000.

FEATURES

- Excellent price/performance ratio
- Single ended DC operation
- High frequency response
- Shock and vibration resistant
- Extremely light weight spoiler
- AISI 300 Series stainless steel housing
- Calibration certificate supplied with each unit

APPLICATIONS

- OEM volume, cost sensitive applications
- Dynamic measurements
- Tool position
- Punch presses / metal stamping
- Valve position
- X-Y table position

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PERFORMANCE SPECIFICATIONS

ELECTRICAL SPECIFICATIONS					
Parameter	LCIT 250	LCIT 500	LCIT 1000	LCIT 2000	LCIT 4000
Stroke range	0.25 [6.35]	0.5 [12.7]	1 [25.4]	2 [50.8]	4 [101.6]
Sensitivity, VDC/inch [VDC/mm]	16 [0.63]	8 [0.31]	4 [0.16]	2 [0.08]	1 [0.04]
Input voltage	+7 to +36VDC				
Line regulation	1mV/VDC maximum; 0.2mV/VDC typical				
Input current	20mA maximum; 15mA typical				
Output voltage	+0.5 to +4.5VDC (Increases when the core is displaced towards the lead-wires)				
Output @ null	+2.5 VDC				
Non-linearity	±0.25% of FR maximum				
Output ripple	10mVRMS maximum				
Stability	0.125% of FSO				
Temp. coefficient of sensitivity	0.028%/°F [0.05%/°C]				
Output impedance	1 Ohm maximum				
Frequency response	1,000 Hertz @ -3dB				

ENVIRONMENTAL SPECIFICATIONS & MATERIALS	
Operating temperature	-13°F to +185°F [-25°C to +85°C]
Survival temperature	-67°F to +257°F [-55°C to +125°C]
Shock survival	250 g (11ms half-sine)
Vibration tolerance	10 g up to 2kHz
Housing material	AISI 300 Series stainless steel
Spoiler material	Aluminum (important: only connect non-conductive extension rods to the spoiler)
Electrical connection	4 lead wires, 28AWG, stranded copper, 12 inches [0.3 meter] long

Notes:

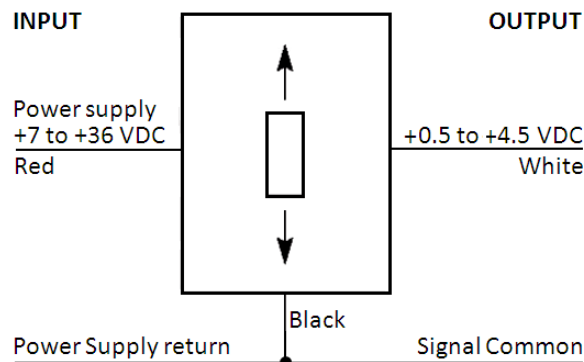
All values are nominal unless otherwise noted

Dimensions are in inch [mm] unless otherwise noted

FR: Full Range is the stroke range, end to end; FR=S for 0 to S stroke range

FSO (Full Scale Output): Largest absolute value of the outputs measured at the ends of the range

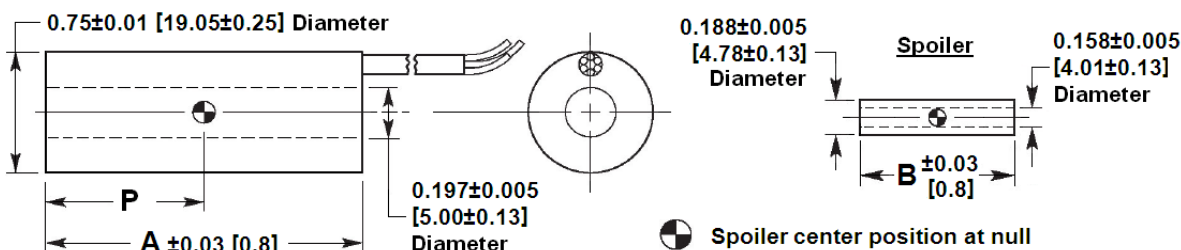
WIRING INFORMATION



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MECHANICAL SPECIFICATIONS

Parameter	LCIT 250	LCIT 500	LCIT 1000	LCIT 2000	LCIT 4000
Main body length "A"	2.60 [66.0]	2.60 [66.0]	3.54 [89.9]	5.54 [140.7]	10.37 [263.4]
Spoiler length "B"	0.85 [21.6]	1.30 [33.0]	1.50 [38.1]	2.70 [68.6]	5.00 [127.0]
Center of spoiler position at null "P"	1.30 [33.0]	1.30 [33.0]	1.77 [45.0]	2.77 [70.4]	5.19 [131.8]
Body weight, oz [gram]	1.4 [40]	1.4 [40]	1.8 [50]	2.5 [70]	4.6 [130]
Core weight, oz [gram]	0.04 [1]	0.05 [1.5]	0.07 [2]	0.07 [2]	0.14 [4]



Dimensions are in inch [mm]

ORDERING INFORMATION

Description	Model	Part Number	Description	Model	Part Number
0.25 inch LVDT	LCIT 250	02520000-000	2 inch LVDT	LCIT 2000	02520003-000
0.5 inch LVDT	LCIT 500	02520001-000	4 inch LVDT	LCIT 4000	02520004-000
1 inch LVDT	LCIT 1000	02520002-000			

ACCESSORIES	DC power supply (15VDC)	PSD 40-15	02291339-000
	Mounting Block		04560950-000

Refer to our "[Accessories for LVDTs](#)" data sheet for our LVDT signal conditioning instrumentation and other accessories.

TECHNICAL CONTACT INFORMATION

NORTH AMERICA	EUROPE	ASIA
Measurement Specialties, Inc. 1000 Lucas Way Hampton, VA 23666 United States Phone: +1-800-745-8008 Fax: +1-757-766-4297 Email: sales@meas-spec.com Web: www.meas-spec.com	MEAS Deutschland GmbH Hauert 13 D-44227 Dortmund Germany Phone: +49-(0)231-9740-0 Fax: +49-(0)231-9740-20 Email: info.de@meas-spec.com Web: www.meas-spec.com	Measurement Specialties China Ltd. No. 26, Langshan Road High-tech Park (North) Nanshan District, Shenzhen 518057 China Phone: +86-755-33305088 Fax: +86-755-33305099 Email: info.cn@meas-spec.com Web: www.meas-spec.com

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