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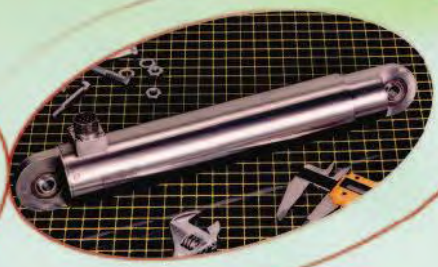
INSTRUMENTS

Linear Variable Differential Transformers



Linear Variable Differential Transformers
Precision instruments for displacement measurement

LVDTs provide simple, cost-effective solutions whenever you need accurate and precise measurement of linear displacement.

Typical applications

- *Servo-hydraulic systems*
- *Automotive engine management*
- *Marine engine management*
- *Structural movement monitoring*
- *Test rigs*
- *Level monitoring*

As well as a wide range of other engineering and laboratory applications.

LVDTs at a glance

- *Rugged construction to withstand harsh environments*
- *Measurement ranges from ±0.25mm to ±550mm*
- *Efficient and accurate non-contact displacement measurement*
- *Available in a wide variety of configurations*
- *Zero mechanical friction models available*
- *Industrial, low cost and compact versions available*
- *High precision: non-linearity <0.5% and repeatability <0.1%*
- *Four output signal options – unconditioned AC, unconditioned DC (voltage), conditioned DC (voltage) or conditioned DC (current)*
- *Fully customisable design service for non-standard applications*

Selection Tips

Our LVDTs come in a wide range of sizes and combinations. They are ruggedly constructed to withstand the harshest of industrial conditions.

Use this simple checklist to help you choose exactly the right products for your application.

When completed, please detach or photocopy and fax back to our sales team for an immediate quotation.

What do you need to cope with your operating environment?

Construction material

- ☐ *Standard stainless steel construction*
- ☐ *Other material (please specify):* _____

Operating Temperature
(-30°C to +85°C standard)

- ☐ *-30°C to +85°C*
- ☐ *-30°C to +150°C*

Sealing (IP65 standard)

- ☐ *IP65*
- ☐ *IP66*
- ☐ *IP67*
- ☐ *IP68*

What sort of cable exit do you need?

- ☐ *Axial*
- ☐ *Radial*

What sort of core assembly is best for you?

- ☐ *Core only*
- ☐ *Plain core with extension rod*
- ☐ *Guided core with extension rod*
- ☐ *Spring loaded core with extension rod*
- ☐ *Guided core with extension rod and rod end bearings*

What measurement range do you need?

The measurement range is quoted as the maximum displacement to be monitored in either direction away from the midpoint. The stroke length may also be quoted and this is equal to the distance between the maximum displacements in either direction (i.e. 2x measurement range).

For example a range of ±5.0mm equates to a stroke length of 10mm.

- ☐ *Measurement range required (please specify):* _____
  (Minimum = ±0.25mm, maximum = ± 550mm)

What degree of linearity do you need?

Linearity is the accuracy with which the output signal reflects the measured displacement.

- ☐ *Standard linearity (±0.5% full stroke length) is sufficient*
- ☐ *Improved linearity required (please specify):* _____

What electrical output do you need?

The following standard outputs are available:

- ☐ *DC bipolar*
- ☐ *0-10VDC*
- ☐ *0-5VDC*
- ☐ *4-20mADC*

What type of electrical connection do you need?

- ☐ Integral cable
- ☐ Detachable cable with:
  - ☐ Hirschmann connector
  - ☐ Lumberg connector
  - ☐ Military Style connector
  - ☐ Other connector (please specify): _____
- ☐ Free ends with:
  - ☐ Standard 2 metres cable
  - ☐ Extra length to order (please specify): _____

What type of cable do you need?

Material		Finish
☐ PVC	☐ PTFE	☐ Plain
☐ ETFE	☐ Polyurethane	☐ Overbraided

COMMON TECHNICAL SPECIFICATIONS FOR INDUSTRIAL AND ECONOMY SERIES

Measurement range	±0.25 to ±550mm
Non-linearity	<±0.50% stroke length
Repeatability	<±0.10% stroke length
Operating temperature range	-30°C to +85°C (optional to +150°C) 0°C to 70°C on DC models
Vibration resistance	20g up to 2kHz
Shock resistance	1000g for 10ms
Construction material	Stainless steel core and case
Connections	2-metre screened cable Radial exit (optional axial)

Power requirements and electrical output	Power input	Signal output
	5Vrms @ 3kHz	AC
	9-24VDC input	0-5VDC
	14-24VDC input	0-10VDC
	12VDC input	±2.5VDC
	24VDC input	±5VDC
	14-24VDC input	4-20mA

Industrial, Economy or Miniature Series?

	Industrial	Economy	Miniature
General comments on use	*Highest level of protection for severe factory and processing environments*	*Used in less demanding environments where cost is more important*	*Used in demanding environments where space is at a premium*
Typical applications	• *Paper mills* • *Process plant* • *Industrial test rigs*	• *Mechanical testing machines* • *Automotive research* • *Actuator position monitoring*	• *Materials testing* • *Automotive test rigs and actuators* • *Aerospace test rigs and actuators* • *Load cells* • *Pressure transducers* • *Weighing systems* • *Closed-loop control applications*
Standard build characteristics	• *Guided core and extension* • *Sealed at one end* • *Radial exit* • *Electronics sealed to IP66*	• *Free core and extension* • *Open both ends* • *Axial exit* • *Electronics sealed to IP65*	• *Free core* • *Body diameter up to 9.5mm* • *Stroke length ±0.25mm to ±50mm*
Build options	• *Axial exit* • *Connector* • *Spring loaded* • *Rod end bearings* • *Extension rod wiper* • *Sealed to IP68*	• *Radial exit* • *Spring loaded* • *Guided core* • *Rod end bearings*	• *Radial exit* • *Spring loaded*

For pricing or any further information, please contact Omni Instruments Ltd.

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