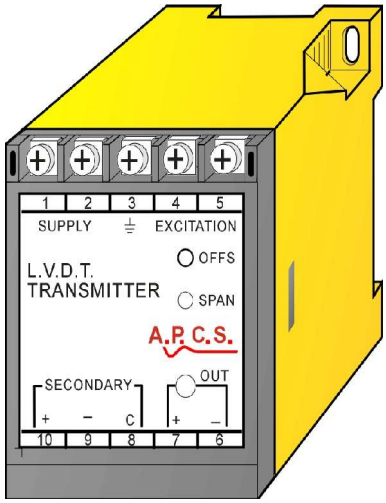
LVDT Transmitter v3 LVDT149

DESCRIPTION



An LVDT (Linear Variable Differential Transformer) is a position transducer that is used to measure very small displacement or any parameter that can be converted to linear movement. The LVDT consists of an insulated moving core that magnetically couples the primary winding on the bobbin to two opposing secondary windings. The LVDT149 Transmitter interfaces to the LVDT providing an ac sine wave excitation to the primary winding and measures the two secondary winding signals (amplitude and phase). As the core moves from the null position, the differential in flux coupled to the two secondaries produces a voltage difference between them. The amplitude and phase information is measured by the LVDT149 and converted to a dc output that is proportional to the core movement.

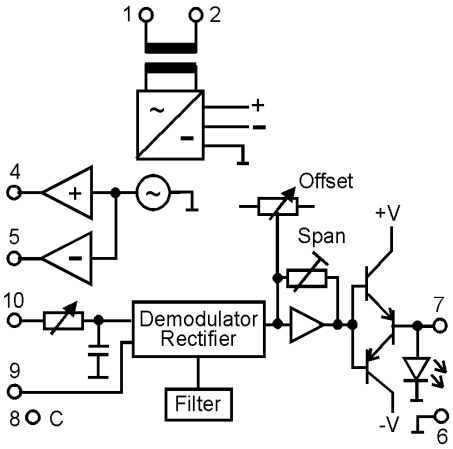
Because there is no physical contact between the movable core and coil structure, the LVDT has friction-less performance and essentially infinite mechanical life. This is important in high-reliability equipment. It also provides truly infinite resolution. This is important in measuring very small movements.

The LVDT149 converts the displacement information into a common process dc signal that can be used for measurement, display or control. Final calibration is trimmed using the front accessible 'offs' and 'span' 15-turn trim adjustments. The output signal level is indicated by a green L.E.D. on front, giving a clear indication of module function, presence of signal and output loop closed (for current outputs only). All units are fitted with a 0.1 second filter. This filter constant can be increased or decreased if required. RF and power transient protection is also standard as with all A.P.C.S. modules. Various power supply choices are available ranging from 240Vac down to 8Vdc.

General Specifications

Size:	52 W x 70 H x 110 D (mm).
Mounting:	DIN-Rail, gear plate.
Termination:	Screw terminals on front.
Protection class:	IP40 (IP65 Enclosure opt.)
Weight:	0.300 kg.
Housing material:	Polycarbonate.
Accuracy:	0.2% of span.
Front 'OFFS' adjust:	±20% typical.
Front 'SPAN' adjust:	±20% typical.
Temperature effect:	0.02% per °C.
Operating temp.range:	-10...+60°C.
Output load effect:	less than 0.2% up to max. load.
Output loop drive:	±10mA into 0 - 2000 Ω ±20mA into 0 - 1000 Ω
Output voltage load:	±10V into 200 Ωminimum. ±20V into 400 Ωminimum. 10 minutes max.
Input/output isolation:	None.
Power requirements:	ac supply 4W, dc supply 3W.
Power supply isolation:	2kV r.m.s.
Electromagnetic compatibility:	Complies with AS/NZS 4251.1 (EN 50081.1)

Block Diagram



For input / output combinations refer to TYPE NO. DESIGNATION overleaf.

A.P.C.S.

LVDT149 - X XX X XX

Power Supply:

1 = 240V, 50/60Hz ±10%.
2 = 120V, 50/60Hz ±10%.
3 = 24V, 50/60Hz ±10%.
*) 4 = 8 - 60Vdc Isolated.
*) 5 = 60 - 240Vdc Isolated.
*) 9 = Other (Specify).

Output:

Unipolar		Bipolar
01 = 0 - 5V	(50k Ω min).	09 = -1...+1V (25 Ω min).
02 = 0 - 10V	(100 kΩ min).	10 = -5...+5V (100 Ω min).
03 = 0 - 20mA	(900 Ω max).	11 = -10...+10V (200 Ω min).
04 = 4 - 20mA	(900 Ω max).	12 = -20...+20V (400 Ω min).
05 = 0 - 50mA	(360 Ω max).	13 = -1...+1mA (20k Ω max)..
06 = 10 - 50mA	(360 Ω max).	14 = -5...+5mA (4k Ω max).
07 = 0 - 10mA	(1.8k Ω max)..	15 = -10...+10mA (2k Ω max).
08 = 1 - 5V	(50k Ω min).	16 = -20...+20mA (1k Ω max).

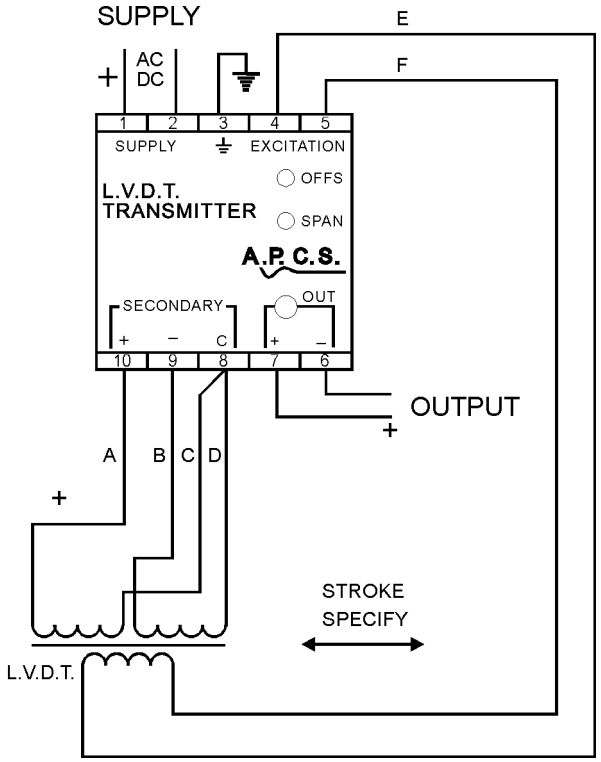
*) 99 = Other specify.

Action:

1 = In/Out Direct. 2 = In/Out Reverse.

Output Options:

00 = None.
*) 01 = Customer response time (Specify)
*) 02 = Output ramp
*) 99 = Other (Specify).



BRAND (SPECIFY)

MODEL

STROKE mm

SENSITIVITY mV / V / mm

FREQUENCY Hz

COLOUR CODES

CODE	COLOUR
A	
B	
C	
D	
E	
F	

(Determine from sensor data).

Includes 24Vdc/25mA auxiliary supply on terminal 8.
*) Price Extra.