

# LVDT Transmitter v4 LVDT149

## DESCRIPTION

The LVDT149 converts the displacement information from an LVDT sensor into a common process dc signal that can be used for measurement, display or control.

The LVDT149 provides a 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.

Final calibration is trimmed using the front accessible OFFS and SPAN 15-turn trim adjustments. The output signal level is indicated by a green LED 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.

Various power supply choices are available ranging from 240Vac down to 8Vdc.

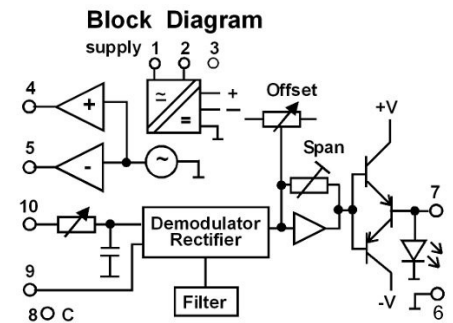


## About the LVDT Sensor

The LVDT is a Linear Variable Differential Transformer 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. Because there is no physical contact between the movable core and coil structure, the LVDT has friction-less performance and essentially infinite mechanical life.

## 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
Weight:	0.300 kg.
Housing material:	ABS.
Accuracy:	0.2% of span.
Front 'OFFS' adjust:	±20% typical.
Front 'SPAN' adjust:	±20% typical.
Temperature effect:	0.02% per °C.
LVDT excitation:	Depending on LVDT used.
Frequency range:	0.5 to 10kHz
Amplitude:	Up to 2Vrms
Operating temp.range:	-10...+60°C.
Output load effect:	less than 0.2% up to max. load.
Output loop drive:	±10mA into 0 - 2000Ω. ±20mA into 0 - 1000Ω.
Output voltage load:	±10V into 200Ω minimum. ±20V into 400Ω minimum. 10 minutes max.
Input/output isolation:	None.
Power requirements:	3W.
Power supply isolation:	2kVrms.
Electromagnetic compatibility:	AS/NZS 4251.1 (EN 50081.1)



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

**Power Supply:**

- 1 = 90-280Vac 50/60Hz (65-280Vdc). \*) 4 = 8 - 60Vdc.
- \*) 3 = 16-48Vac 50/60Hz (10-60Vdc) \*) 9 = Other specify.

**Output:**

- |   |   |
|---|---|
| <p><b>Unipolar</b></p> <ul style="list-style-type: none"> <li>01 = 0 – 5V (50kΩ min).</li> <li>02 = 0 – 10V (100kΩ min).</li> <li>03 = 0 – 20mA (900Ω max).</li> <li>04 = 4 – 20mA (900Ω max).</li> <li>05 = 0 – 50mA (360Ω max).</li> <li>06 = 10 – 50mA (360Ω max).</li> <li>07 = 0 – 10mA (1.8kΩ max)..</li> <li>08 = 1 – 5V ( 50kΩ min).</li> </ul> | <p><b>Bipolar</b></p> <ul style="list-style-type: none"> <li>09 = -1...+1V (25Ω min).</li> <li>10 = -5...+5V (100Ω min).</li> <li>11 = -10...+10V (200Ω min).</li> <li>12 = -20...+20V (400Ω min).</li> <li>13 = -1...+1mA (20kΩ max)..</li> <li>14 = -5...+5mA (4kΩ max).</li> <li>15 = -10...+10mA (2kΩ max).</li> <li>16 = -20...+20mA (1kΩ max).</li> <li>*) 99 = Other specify.</li> </ul> |
|---|---|

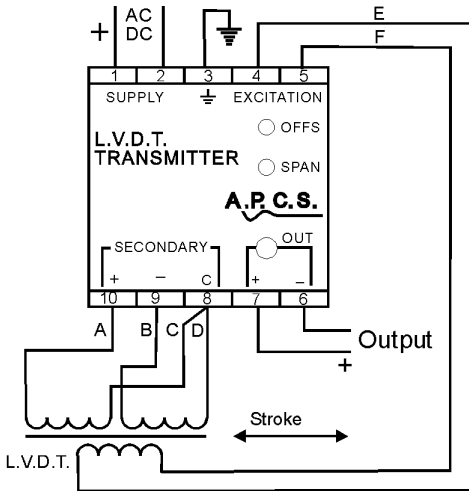
**Action:**

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

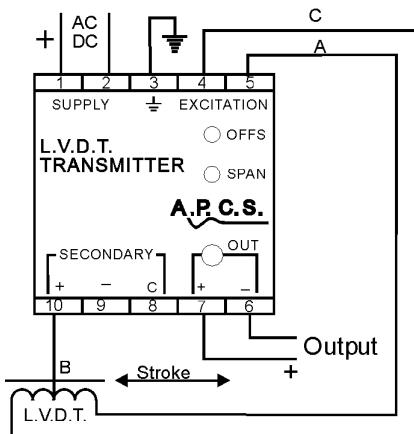
**Output Options:**

- 00 = None.
- \*) 01 = Customer response time, specify
- \*) 02 = Output ramp
- \*) 99 = Other specify.
- \*) = Price Extra
- # = Includes 24Vdc/25mA auxiliary supply on terminal 8.

**Primary / Secondary Connection**



**3- Wire Connection**



In the interest of development and improvement, APCS reserve the right to amend, without notice, details contained in this publication. APCS will accept no legal liability for any errors, omissions or amendments.

**Brand (specify)**

**Model**

**Stroke**

 mm

**Sensitivity**

 mV / V / mm

**Frequency**

 Hz

**Connection**

- Primary/Secondary
- 3-Wire

**COLOUR CODES**

CODE	COLOUR
A	<input style="width: 100%; height: 20px;" type="text"/>
B	<input style="width: 100%; height: 20px;" type="text"/>
C	<input style="width: 100%; height: 20px;" type="text"/>
D	<input style="width: 100%; height: 20px;" type="text"/>
E	<input style="width: 100%; height: 20px;" type="text"/>
F	<input style="width: 100%; height: 20px;" type="text"/>

(Determine from sensor data).