

LVDT Analogue Signal Conditioner

Features

- Variable gain sensitivity from 4.4mV/V to 2.2V/V
- Variable offset upto $\pm 40\%$ full range
- Switched range low pass filter 5kHz to 200Hz
- On-board excitation suitable to drive Primary Coils down to 50ohms AC
- High stability
- Non interaction gain and offset
- Wide range of power supplies
- Selectable outputs options- 0-5V, 0-10V, $\pm 5V$, $\pm 10V$, 0-20mA or 4-20mA
- High Accuracy

Introduction

The LVDT conditioner provides a wide range of signal conditioning for LVDT Transducers.

Offered in two versions, the LVDT-A for 110/240vac and the LVDT-D which is DC powered for 18-28VDC operation.

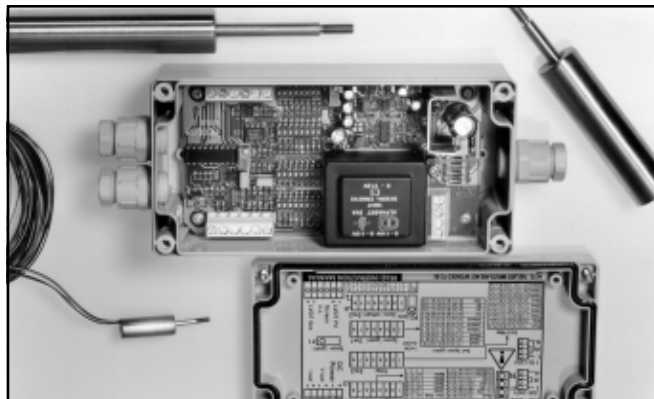
Transducer sensitivities between 4.4mV/V and 2.2V/V are accommodated by a combination of DIL switch settings and a fine potentiometer.

Similar arrangements are provided for any 'zero' errors in the transducers and can also be used to offset the readings by up to $\pm 40\%$ of full scale.

A wide frequency response is offered of typically DC to 200Hz. There is an on-board low pass filter which can be switched in to reduce high frequency fluctuations or induced electrical noise, to give stable readings under adverse conditions.

A wide range of output options for current, and uni-polar or bi-polar voltage can be configured by DIL switch settings.

Both the AC and DC versions are based on a common board and are mounted in a light grey ABS case, sealed to IP65.



Power Supply

Supply Voltage	24VDC	(18-24VDC)	(Model LVDT-D)
	110/240VAC	(99-126/ 198-253VAC)	(Model LVDT-A)

LVDT Excitation Supply

LVDT Excitation	4.5V RMS or 2.25V RMS (user selectable)
Transducer Excitation Frequency	1, 2, 3, 4, 5kHz (user selectable by DIP switches)
LVDT Primary Coil Resistance	50ohms minimum with 2.25V RMS excitation @ 5kHz

Input Characteristics

Type	Inductive LVDT
Full Scale Transducer Output Range	4.4mV/V to 2.2V/V (at LVDT full stroke, with 4.5V RMS excitation)
Zero Adjustment	30% coarse adjustment using DIP swithes 10% fine adjustment using 20 turn potentiometer
Zero Temperature Coefficient	<2 micro-volts/ $^{\circ}$ C typical
90 day Zero Stability	6 micro-volts typical
Input Filter	Set by dip switches giving -3dB points at nominally 5, 10, 15, 20, 50, 100, 150, 200Hz cut-off frequencies

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Output Characteristics	
<i>Voltage Output</i>	Selectable to +/- 5VDC +/- 10VDC 0 to 5 VDC 0 to 10VDC
<i>Maximum Load Current</i>	Bipolar input (-F.S. to + F.S.) 2mA
<i>Current Output</i>	Selectable to 0-20mA 4-20mA
<i>Maximum Loop Drive</i>	500 ohms
<i>Span Temperature Coefficient</i>	<0.010% of reading/°C typical
<i>Overall Input/Output Gain Stability</i>	+/- 0.01%/°C typical
<i>Output Ripple (50Hz filter, 1kHz excitation)</i>	<0.05% of full scale
<i>Linearity</i>	<0.05% of full scale typical
Controls	
<i>Potentiometers</i>	1 x fine gain, 1 x fine offset.
<i>Switch Settings</i>	DIL switches will be used for: Coarse Gain Coarse Offset Filter: In/Out and cut off frequency Output Range Selection Input Filter (1KHz)
<i>Interaction</i>	Gain and Offset non-interactive
Physical	
<i>Operating Temperature Range</i>	0 to +50°C
<i>Storage Temperature Range</i>	-20 to 70°C
<i>Mechanical</i>	Supplied with screw clamp terminals capable of accepting wires to 2.5mm ²
<i>Case</i>	ABS case of maximum external dimensions of 160 x 80 x 55mm.

In the interests of continued development, we reserve the right to alter product specifications without prior notice.