



## LVDT-8U

Eight Channel Universal  
Signal Conditioner Board

### FEATURES

- Eight channels of AC LVDT conditioning
- Full-bridge and Half-bridge LVDTs supported
- Offset and wide-range gain calibration pots
- Removable screw terminal blocks for easy connection and serviceability
- Installed in a steel enclosure (RT-BOX or T-BOX)
- Use easily with PLC or PC-based Data Acquisition
- Non-multiplexed, simultaneous conditioned outputs
- Compatible with other ACCES A/D products for use in legacy systems using DB37M connector
- Jumper selected LED display utility for quick and easy operating verification of connected LVDTs
- Factory oscillator frequency of 10kHz
- Master / Slave excitation frequency synchronization
- Onboard DC/DC converter with reverse power protection operates on a single 9VDC to 36VDC external source

### FACTORY OPTIONS

- Powered from 36VDC to 75VDC or  $\pm 15$ VDC
- Excitation frequencies from 20Hz to 20kHz
- Non-synchronized oscillators
- Wide gain ranges available per channel
- Multiplexor accessory (LVDT-MUX) allows up to eight LVDT-8U boards to be connected to one A/D board
- OEM version ships without steel enclosure



### FUNCTIONAL DESCRIPTION

The LVDT-8U signal conditioning board was designed to improve upon the advances made with the release of our LVDT-8A model. Half-bridge LVDTs requiring high-gain and a wide offset adjustment are now supported, as well as the inclusion of one master channel for frequency generation, which all other channels may be synchronized to. This eliminates beat frequencies when sampling the outputs with a fast A/D, providing more reliable and accurate data.

The board supplies excitation and the corresponding conditioning of the outputs for up to eight independent LVDT transducers simultaneously. Those outputs are then readily available via removable screw terminals for introduction to a data acquisition or measurement circuit such as an analog to digital converter or simply by using a display meter.

It also has an LED display utility for quick and easy checkout of the sensors and signal conditioner operation. Jumper select the channel of interest and observe the output voltage level as +10V, +5V, ZERO, -5V or -10V. This inherently makes the product more serviceable and vastly more user friendly.

### LVDT and SYSTEM VARIATIONS

Certain LVDT sensor specifications affect the way the LVDT-8U board will be configured for your application, so please have this information available when placing your order.

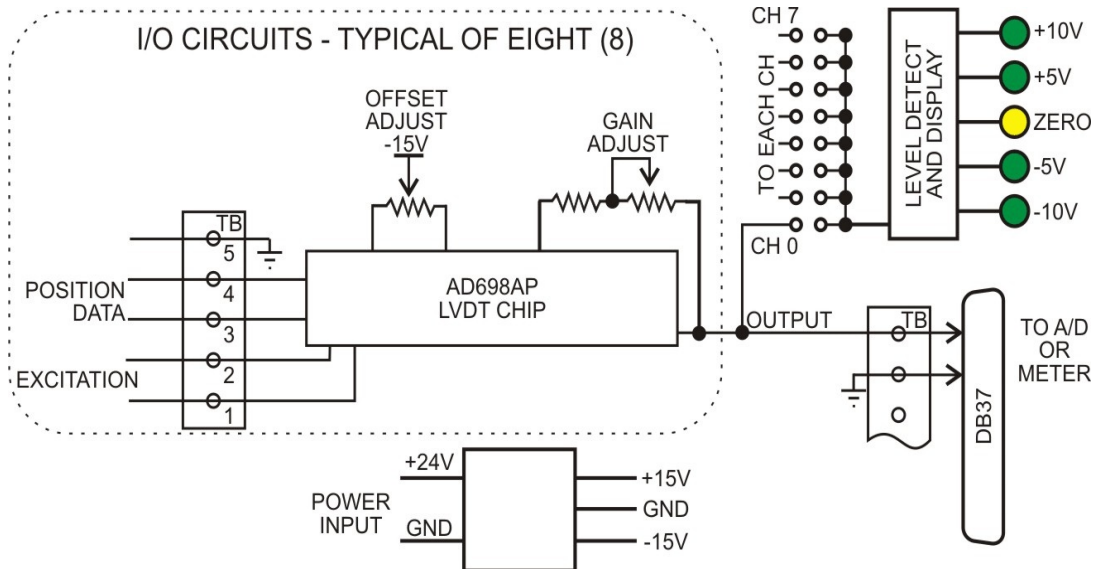
- Model Number of LVDT (a second set of eyes always helps to verify the specifications)
- Configuration / Number of wires (full-bridge / 4 wires or half-bridge / 3 wires)
- Displacement / Travel (usually specified in mm or mils if not in metric)
- Displacement / Travel of interest (this is often less distance than the LVDT is capable of)
- Output Span / Sensitivity (usually specified in mV/V/mils)
- Excitation Voltage (such as 2.5Vrms nominal)
- Excitation Frequency (such as 4.8kHz  $\pm 8\%$ )
- Desired Output Signal Level (such as  $\pm 1$ V to  $\pm 14$ V)
- Desired Bandwidth (the rate at what the LVDT probe tip will be moving)

### ACCESSORIES

Accessories include an assortment of 37-pin ribbon cables for connecting the conditioned outputs to a variety of readily available analog to digital converter products. ACCES offers a broad range of A/D products using USB, RS-485, PCI, PC/104, Ethernet, 900MHz/2.4GHz wireless, and even ISA bus types. For high-channel count applications our multiplexor accessory allows up to eight LVDT-8U boards to be connected to one 8-channel A/D board.

No software is necessary to start using the LVDT-8U. A user friendly setup program and user manual is included with each shipment. The setup program can be used to help with the selection of application specific options and the user manual contains full details on the boards operation.

## BLOCK DIAGRAM



## SPECIFICATIONS

Transducers Served:  
Signal Conditioner:  
Excitation Frequency:

LVDT, RVDT, LVRT with primary impedances of 150 Ohms or more  
AD698AP  
10kHz standard  
The frequencies may be anywhere in the range of 20Hz to 20kHz however this is a factory installed option which should be specified at the time of purchase.  
Frequencies may also be different for each LVDT channel.  
+9 to 36 VDC at 700 mA maximum

Power Required:

Options include:  
+48 (36 to 75) VDC at 175 mA maximum  
External power supply: +/- 12VDC or +/- 15VDC at +/- 300 mA maximum  
<±5VDC to >±10VDC

Output Analog Voltage Range:

### Environmental

Operating Temperature: 0°C to 65°C (-40° to +85°C available as extended temperature option)  
Storage Temperature: -40°C to +100°C  
Humidity: 0 to 90%, non-condensing  
Size (LVDT-8U card): 8.0" long (203 mm) X 4.74" wide (120 mm) X 0.75" high (19 mm)  
Size (RT-BOX): 8.5" long (216 mm) X 5.25" wide (133 mm) X 2.375" high (60 mm)

### Ordering Guide

LVDT-8U  
LVDT-MUX  
Signal conditioning card installed in enclosure  
Multiplexor Accessory board



## Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

### US

[sales@assured-systems.com](mailto:sales@assured-systems.com)

Sales: +1 347 719 4508

Support: +1 347 719 4508

1309 Coffeen Ave  
Ste 1200  
Sheridan  
WY 82801  
USA

### EMEA

[sales@assured-systems.com](mailto:sales@assured-systems.com)

Sales: +44 (0)1785 879 050

Support: +44 (0)1785 879 050

Unit A5 Douglas Park  
Stone Business Park  
Stone  
ST15 0YJ  
United Kingdom

VAT Number: 120 9546 28

Business Registration Number: 07699660