

# INTERFACE

## LVDT AC to DC CONVERTER



The output of an LVDT (Linear Variable Differential Transformer) is an alternating voltage with a magnitude which varies in proportion to the position of a magnetic core within the sensor. The output of the AC to DC converter is a DC voltage, in the 0 to 5V range, which is also proportional to core location. The converter also supplies the AC excitation voltage for the LVDT. The interface is available either as a circuit board for OEM installations or encapsulated in a heatshrink boot.

### Electrical

The following electrical characteristics are to suit a Schaevitz MHR1000 LVDT (Sensitivity 30mv/v/mm, Stroke  $\pm 25.4$ mm, Secondary to Primary transformer ratio at null 2). The interface can be configured for other LVDTs. Please contact our technical consultancy service if you require this service.

- Supply voltage 10  $\pm 0.4$ V DC regulator
- Supply current 35mA max
- Output range 4  $\pm 0.2$ V DC for full stroke of LVDT
- Output for zero displacement 2.5  $\pm 0.1$ V DC
- Maximum output voltage  $\pm 10$ V DC
- Bandwidth 1kHz (can be adjusted during manufacture)
- Excitation voltage 2.2  $\pm 0.25$ V rms (other voltages can be supplied)
- Excitation frequency 10kHz  $\pm 10\%$  (other frequencies between 20Hz and 20kHz can be supplied)

Zero displacement is at the centre of the LVDT. Output decreases as the cores moves into secondary A and increases as it moves into secondary B.

### Mechanical (Encapsulated unit)

- Weight less than 70g including cable
- Elastomer boot for strain relief to the interface body

Design and manufacture is in-house, so if our existing designs do not suit your application, we can provide cost effective customised parts to suit even the most demanding application. No engineering charges are made for simple modifications such as customer specific connectors, cable protection and cable lengths. Please contact our technical consultancy service who will be pleased to help.

### Application

- Conversion of LVDT output to a linear, DC signal in the 0 to 5V range

### Cable and Connection Definition

- Input cable (where fitted) 24 AWG 5-core screened
- Output cable (where fitted) 22 AWG 3-core screened
- Cable length (where fitted) is shown on the order details but any length is available on request
- Various automotive and military standard connectors are available
- Input Connection
 

Red wire	Pin A	Pin 1	Primary +
Black wire	Pin B	Pin 2	Primary –
Green wire	Pin C	Pin 3	Secondary A
Blue wire	Pin D	Pin 4	Secondary B
White wire	Pin E	Pin 5	Secondary Centre

- Output Connection
 

Red wire	Pin A	Pin 1	DC Supply
Green wire	Pin B	Pin 2	Output Signal
White wire	Pin C	Pin 3	Ground

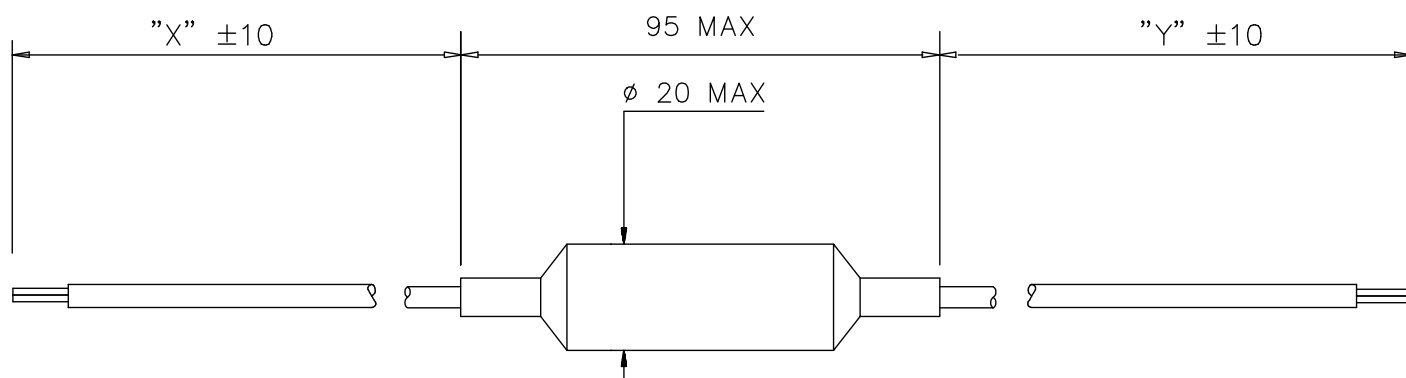
The interface is protected against reverse polarity on the supply.

### Environmental

- Resistant to standard motorsport fluids (encapsulated unit)
- Maximum humidity 100% (encapsulated unit)
- Operating temperature 0 to 70 °C
- Storage temperature -20 to +85 °C
- DR25 jacketed cable (encapsulated unit)
- Vibration 50 to 2500Hz @ 40g 8hrs per axis

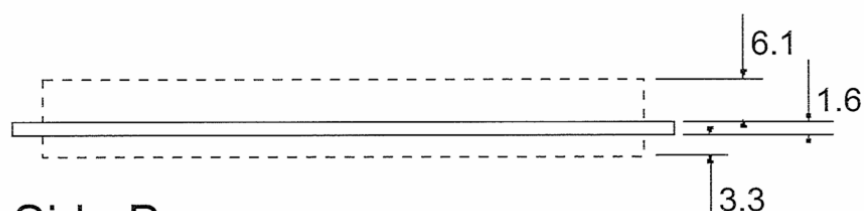
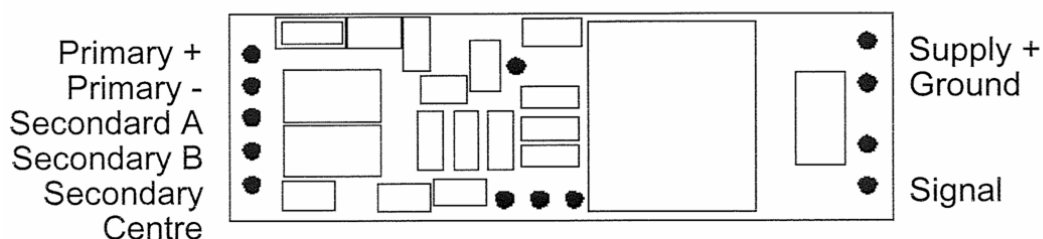
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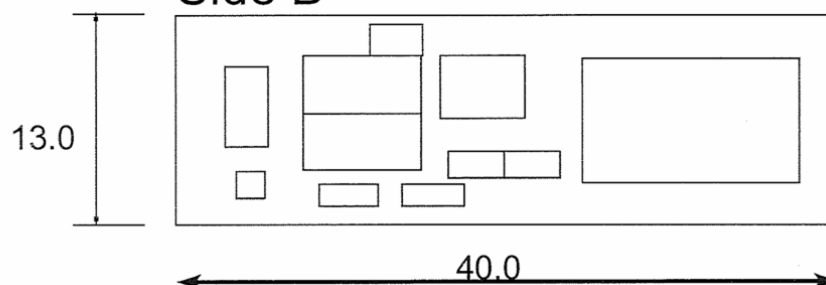


Dim "X"	Dim "Y"	Order Code
500mm	500mm	O 030 200 002 003

### Side A



### Side B



Description	Order Code
Circuit Only	O 030 200 002 006