



## **SIGNAL CONDITIONER**

### **LVDT/RVDT**

### **Difference Over Sum (Ratiometric)**

### **MACRO EAZY-CAL™ LVC-4500**

#### **Overview**

The EAZY-CAL™ LVC-4500 is a standalone ratiometric signal conditioner, measuring the voltage difference divided by the sum  $(V_a - V_b) / (V_a + V_b)$ , supporting AC LVDTs and RVDTs with a constant sum of secondary voltages,  $(V_a + V_b)$ . Ratiometric signal conditioning minimizes the thermal error of the position sensor.

LVC-4500 provides several choices of voltage, current, and digital RS-485 outputs. Push-button calibration offers intuitive operation as compared to signal conditioners with span and offset trim pots. Fault conditions, such as a wire break on LVDT/RVDT connections, are indicated by blinking LEDs, fault condition error output, and Error Flag Open Collector signal (see manual for details). The LVC-4500 operates from a 9-30V DC power supply and is housed in a polyamide DIN rail-mounted enclosure. Calibration instructions, terminal functions, LVDT connection diagram and DIP switch functions are printed on the side panels for convenience.

Synchronization to other signal conditioners is accomplished by a daisy chain connection to a synchronization bus. One unit will assume the Master function based on DIP switch priority setting. If a fault should occur, the next highest priority unit will take over as Master.

With the use of the RS-485 port, a host computer is able to retrieve measurement data, receive operational status, perform remote calibration, and perform hot swap re-configuration where the calibration settings can be digitally uploaded.

## SIGNAL CONDITIONER

EAZY-CAL™ LVC-4500

### Features

- Supports both constant sum ( $V_a+V_b$ ) and standard AC LVDTs, RVDTs
- Significantly reduces LVDT/RVDT temperature sensitivity
- Push-button or RS-485 command auto-calibration
- Analog voltage or 4-20 mA output
- Digital RS-485 interface
- Master/slave excitation synchronization
- DIN-rail mountable
- Color-coded removable terminal blocks

### User Selectable Features

- Ratiometric  $(V_a-V_b)/(V_a+V_b)$  or Differential  $(V_a-V_b)$  mode
- 0-10V DC, 0.5-4.5V DC,  $\pm 5V$  DC, or 4-20 mA output
- 1.5V<sub>rms</sub> or 3.0V<sub>rms</sub> sensor excitation
- 2.5, 5, 7.5, or 10 kHz excitation frequency
- Low pass filter on output

### Environmental Data

<b>Operating Temperature</b>	-40 to 75°C (-40 to 165°F)
<b>Temperature Sensitivity</b>	<0.02% of FSO/°C (<0.01% of FSO/°F)
<b>EMC Compliance</b>	Emissions: EN55011:2007 Immunity: EN61000-4-2:2009 EN61000-4-4:2004 EN61000-4-6:2009 EN61000-4-3:2010+A2:2010

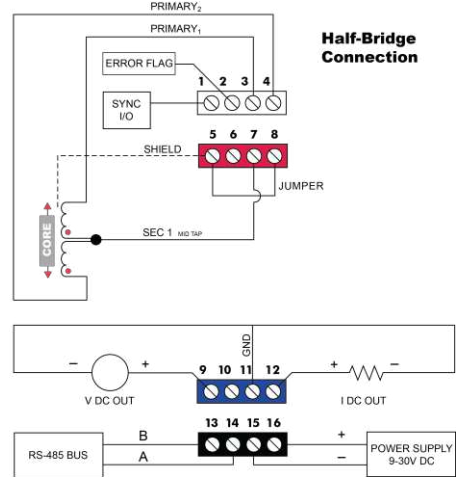
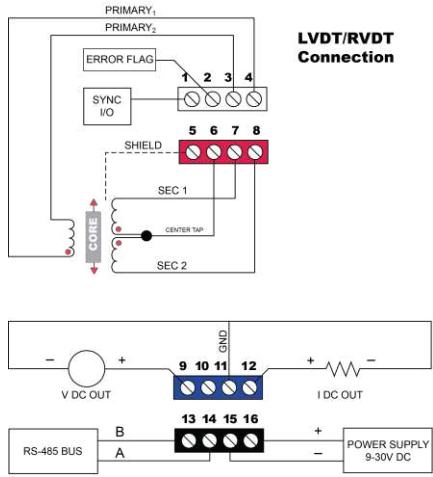
### Electrical Data

<b>Power Input</b>	9-30V DC (80 mA max. @ 24V DC)	<b>Output Non-Linearity</b>	≤±0.1% full scale output
<b>Sensor Excitation</b>	3.0V <sub>rms</sub> (1.5V <sub>rms</sub> selectable)	<b>Output Voltage Ripple</b>	1 mV <sub>rms</sub> max. (2.5 kHz excitation, no filter) 2 mV <sub>rms</sub> max. (10 kHz excitation, no filter)
<b>Sensor Excitation Frequency</b>	2.5 kHz, 5 kHz, 7.5 kHz, or 10 kHz	<b>Output Current Ripple</b>	10 μA <sub>rms</sub> max. (2.5 kHz excitation, no filter) 20 μA <sub>rms</sub> max. (10 kHz excitation, no filter)
<b>Input Sensitivity Range</b>	55 mV <sub>rms</sub> to 5.5 V <sub>rms</sub> full scale input produces full scale DC output	<b>Frequency Response (-3dB)</b>	500 Hz max.

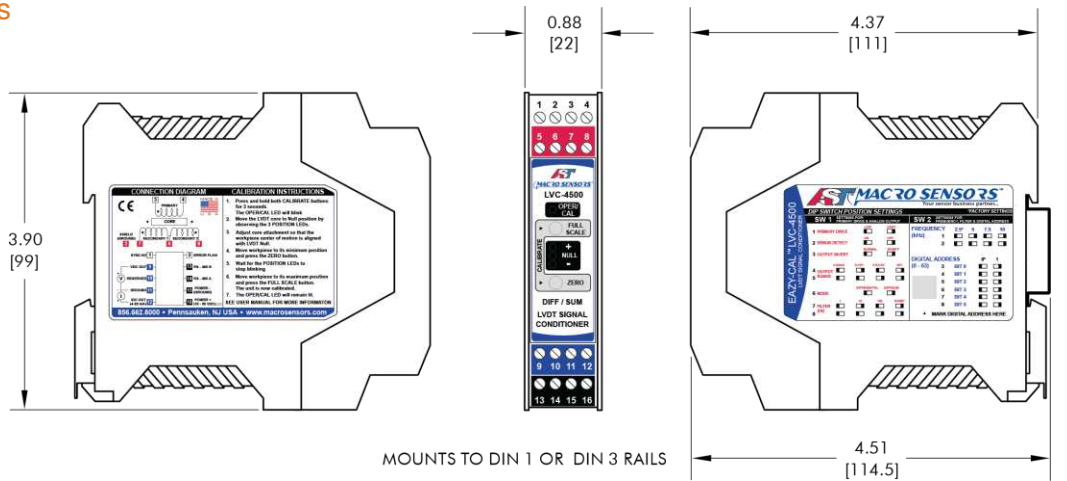
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EAZY-CAL™ LVC-4500

## Connection Diagrams



## Dimensions



All dimensions in inches [mm]