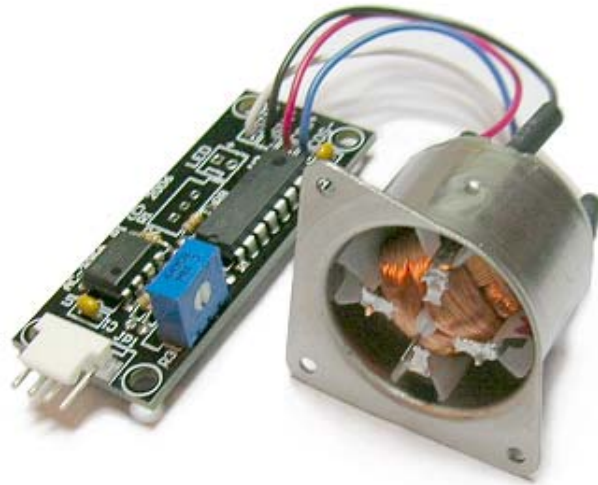The AC305A circuit is designed to provide differential signals necessary to drive any suitable Air-Core Movement with up to 305° range of meter deflection. Suitable for simulation of various automotive and aircraft gauges. Silent and fast, Air-Core Movements offer better performance over servo solutions.

Features:

- Differential outputs provide fast response time and higher torque output for the pointer over PWM solutions.

- Pin compatible with RXC, NITRO expansion cards and Dx10-8BIT DAC card.
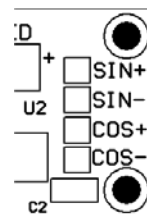
- Output gain adjust.

Connecting the AC305A:

- If you have purchased the AC305A driver with an Air-Core Movement, connect JP1 to the expansion card using a maximum cable length of 36" (22-24 AWG stranded wire).
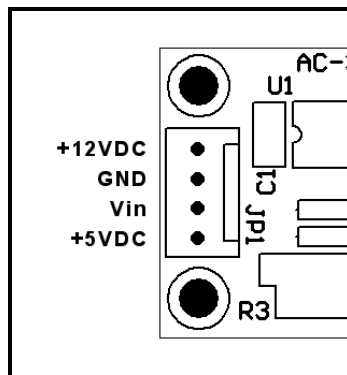

NOTE: The expansion card must supply the required +12VDC. Connect the expansion card to a standard ATX power supply for the Dx10-8BIT card or plug a 12-16VDC (1A) adapter to the **J1** power connector if using the RXC or NITRO card.

- If you have purchased only the AC305A driver circuit, connect the SINE and COSINE outputs to any suitable Air-Core movement such as those found on most automobile instrument clusters.

- Determine the pins of the coil windings by measuring approximately 200 Ohms across the contacts with an ohmmeter. Connect each contact pair to the AC305A output pads (SIN+, SIN, COS+, COS-) using a maximum cable length of 3" (22-24AWG stranded wire).
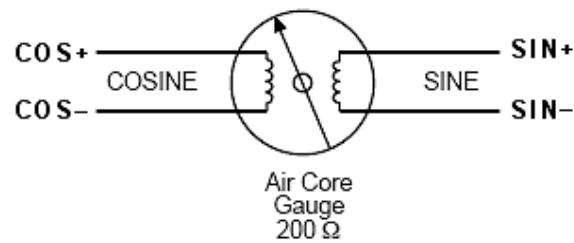
IMPORTANT: Some Air-Core movements found in automobile instrument clusters use gears in order to increase torque. These types are not supported and must be replaced with standard Air-Core Movements whereby the needle is mounted directly onto the shaft.

Calibration Procedure:

In order to calibrate the AC305A driver circuit, use the USB12BITDAC.exe test utility for use with the Dx10-8BIT DAC card or the USBDAC.exe utility for use with the RXC & NITRO card. Both these utilities can be found in the USB toolkit.

1. Set the output to 0V. Press the needle onto the Air-Core Movement's shaft at the minimum position on the gauge.


2. Set the output to 5V. Adjust the GAIN trimpot **R3** so that the needle moves to the maximum position on the gauge.

The Air Core driver circuit is now calibrated and will not need to be adjusted unless the physical range of the meter faceplate is changed. Additional in software calibration may be required depending on the intended application. Refer to accompanying software help file for details.

Mechanical Specifications:
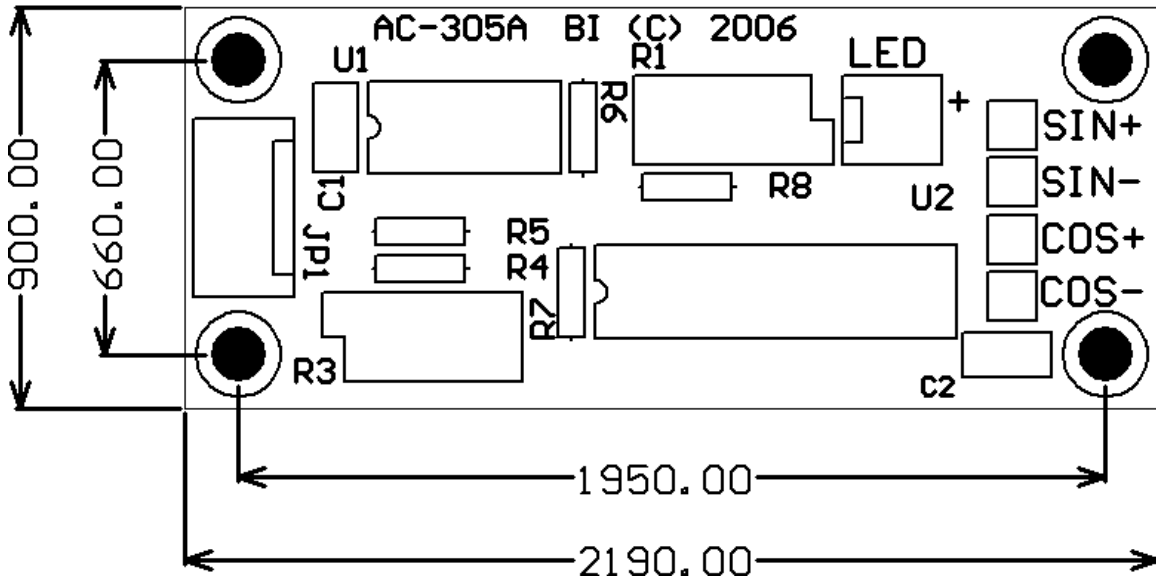
Visit www.betainnovations.com for the availability of expansion modules and accessories.