

The AC360 circuit is designed to provide differential signals necessary to drive any Air-Core Movement with up to 360° 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.

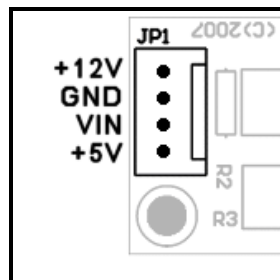
Features:

- Differential outputs provide fast response time and higher torque output for the pointer over PWM driven Air-Core solutions.
- Analog type AC360X are pin compatible with RXC, NITRO & Dx10-8BIT expansion cards.
- Digital type AC360X-DG are pin compatible with DIG-PWM expansion card and NITRO-SLG USB Module.
- No hardware calibration required.

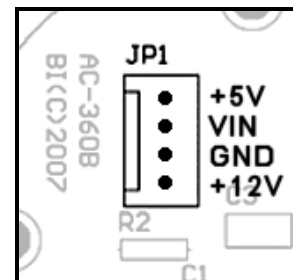
Connecting Analog type AC360X:

- Connect JP1 of the AC360 driver to the expansion card using a maximum cable length of 36" (22-24 AWG stranded wire).

VIN: 0-5VDC analog input signal.



JP1 on AC360A &
AC360B



JP1 on AC360C

NOTE: When using the AC360 in conjunction with expansion cards, connect JP2 on the Dx10-8BIT card to an ATX PS or plug a 12-16VDC@1A AC adapter into the J1 power connector on the RXC or NITRO card.

Connecting Digital type AC360X-DG:

- Connect JP1 of the AC360 driver to the expansion card using a maximum cable length of 36" (22-24 AWG stranded wire).

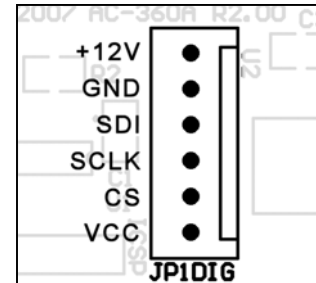
+12V: 12V DC

VCC: 5V DC

CS: chip select

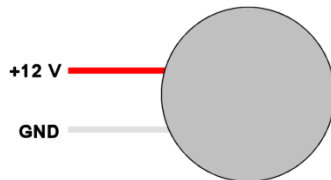
SCLK: serial clock

SDI: serial data



NOTE: When using the AC360 in conjunction with expansion cards, connect the *JP2* on the DIG-PWM card to an ATX PS or plug a 12VDC@1A AC adapter into the *J1* power connector on the NITRO-SLG card.

Connecting the Backlight LEDs:



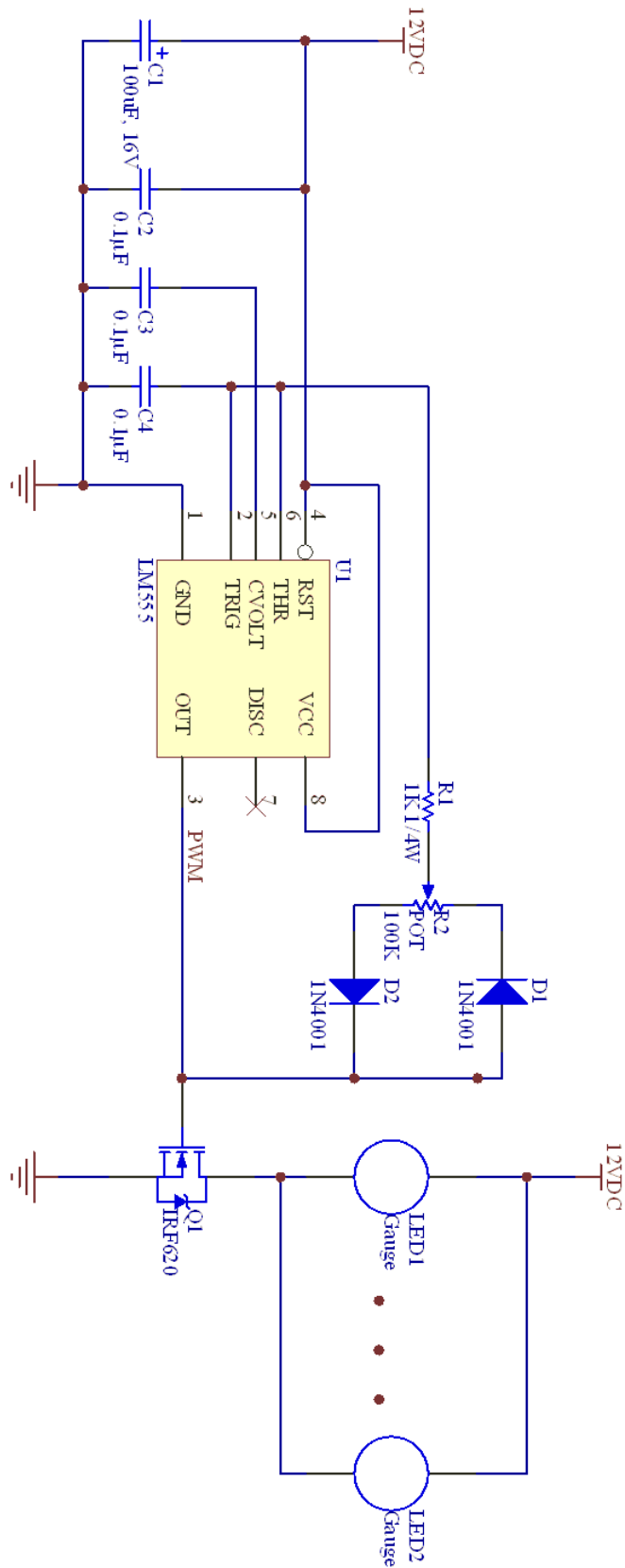
	Current Rating @ 12VDC
AC360A	40 mA
AC360B	80 mA
AC360C	80 mA

- The backlight LEDs can be connected to 12VDC directly or through a 10K Ohm pot for brightness control. Proper selection of the pot power rating is critical when connecting several backlight LEDs. The following chart can be used to determine the total current consumption.

PWM LED Brightness Control:

The following circuit may be used to control the LED brightness through pulse-width-modulated output. The pot R2 controls the duty cycle across the MOSFET Q1, which can handle up to 6 Amps.

Qty.	Part	Description
1	U1	LM555 timer IC
1	C1	100 μ F, 16V electrolytic capacitor
3	C2, C3, C4	0.1 μ F ceramic capacitor
2	D1, D2	1N4001 diode
1	R1	1K Ω 1/4W resistor
1	R2	100K Ω potentiometer
1	Q1	IRF620 power MOSFET



Calibration Procedure:

Although the AC360 driver circuit does not require any hardware calibration, the pointer must be properly installed at the zero position on the gauge prior to use. Use the USBDACS.exe test utility for this purpose, which can be found in the USB toolkit.

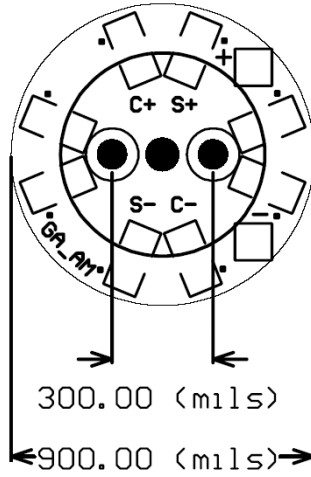
Set the output to 0V for analog gauges or 0 binary for digital gauges. Press the needle onto the Air-Core Movement's shaft at the minimum or zero position on the gauge.



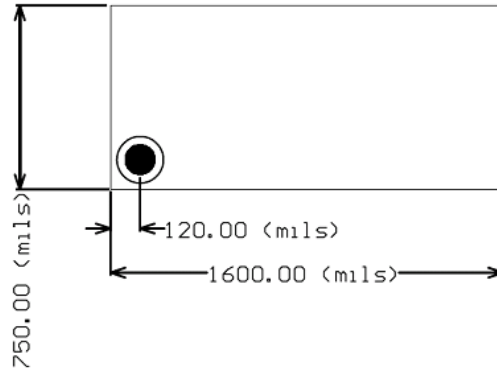
The Air Core driver circuit is now ready to use and will not need to be adjusted unless the physical range of the meter faceplate is changed. Additional in software calibration may be required depending on the intended application. Refer to the interface software help file for details.

Mechanical Specifications AC360A-XX:

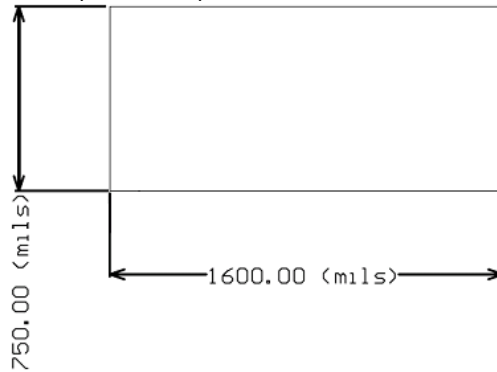
LED Backlight PCB



AC Driver PCB (Rev 1.00)

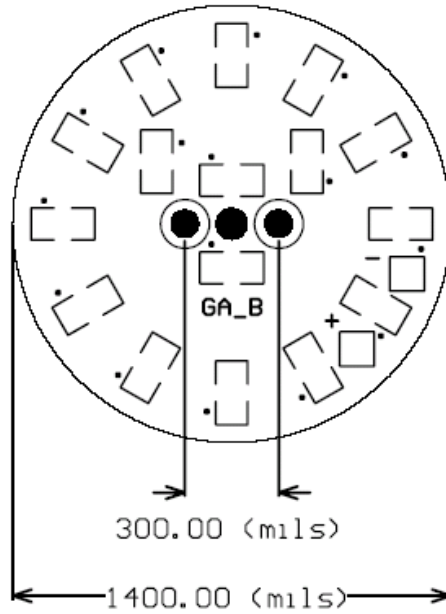


AC Driver PCB (Rev 2.00)

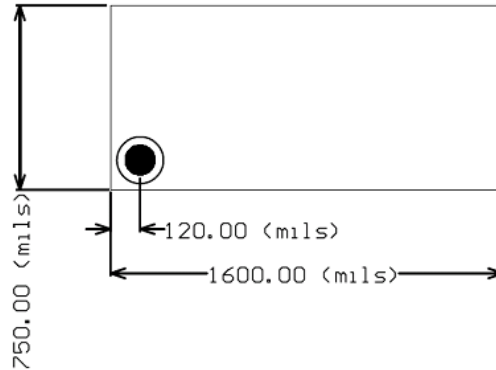


Mechanical Specifications AC360B-XX:

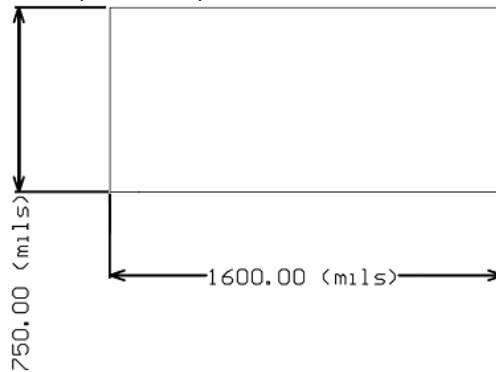
LED Backlight PCB



AC Driver PCB (Rev 1.00)

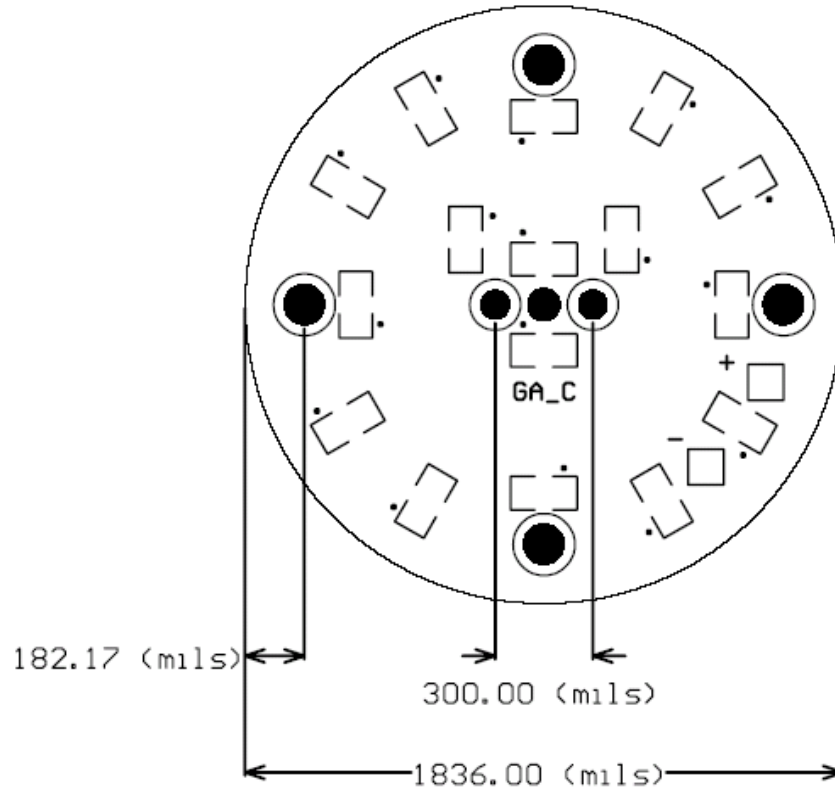


AC Driver PCB (Rev 2.00)

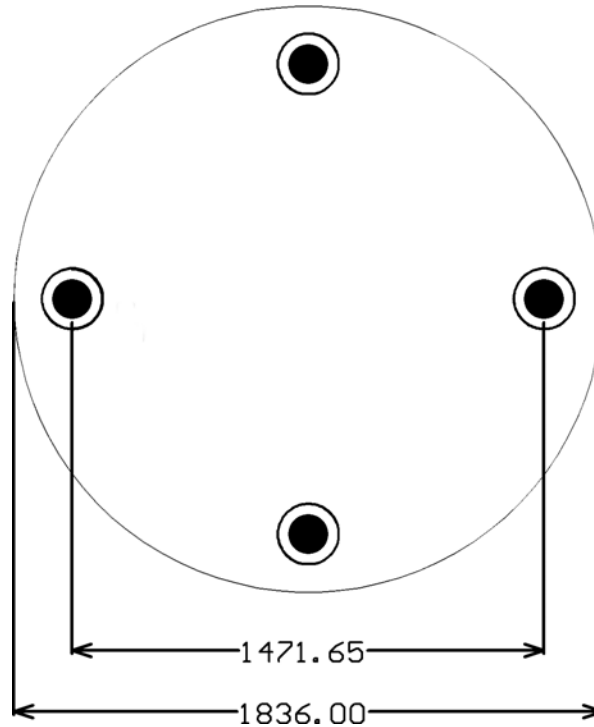


Mechanical Specifications AC360C-XX:

LED Backlight PCB

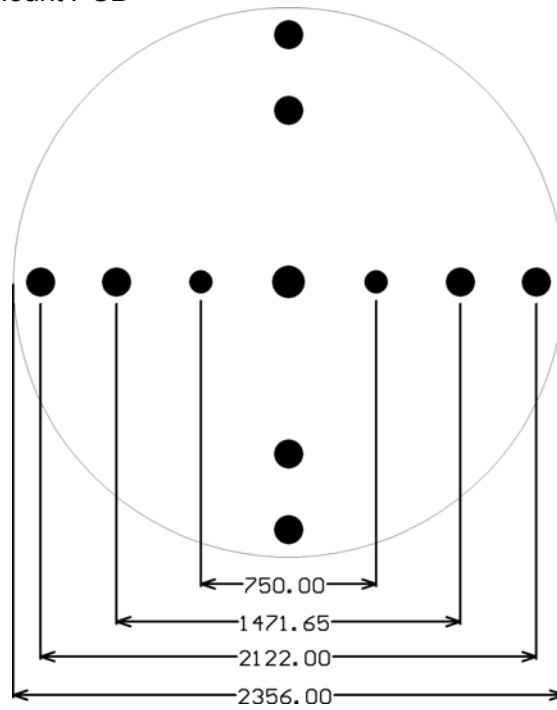


AC Driver PCB

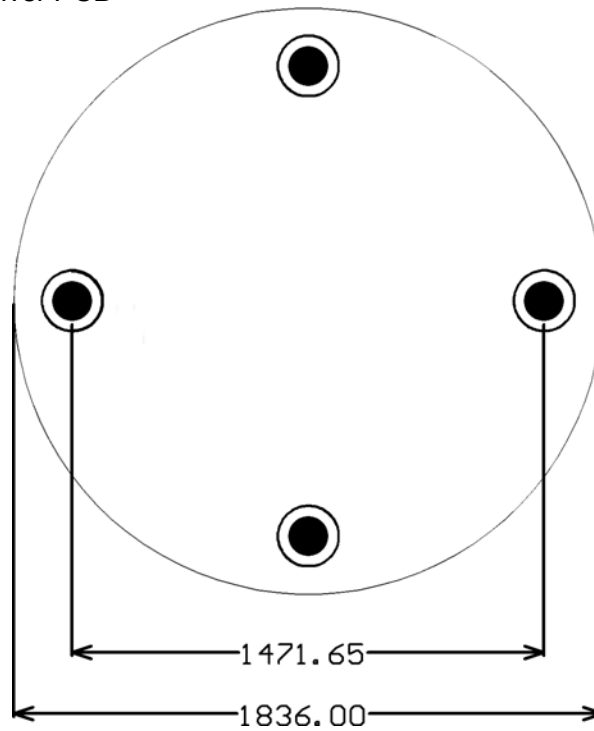


Mechanical Specifications AG2-XXXXX:

Panel Mount PCB

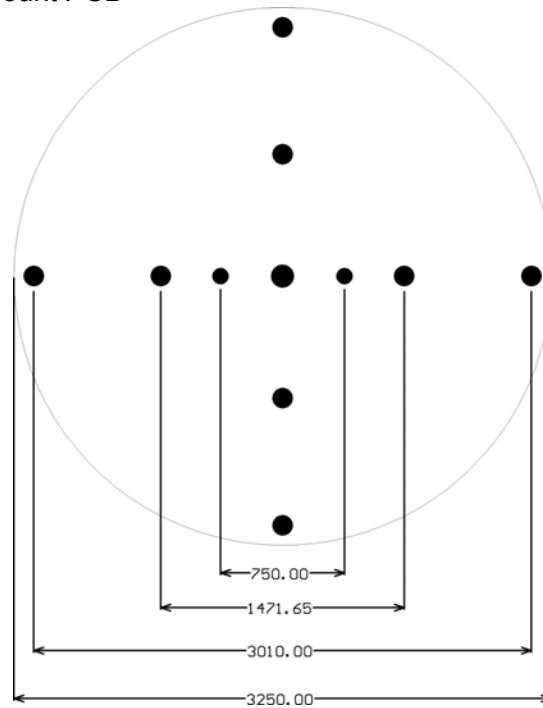


AC Driver PCB

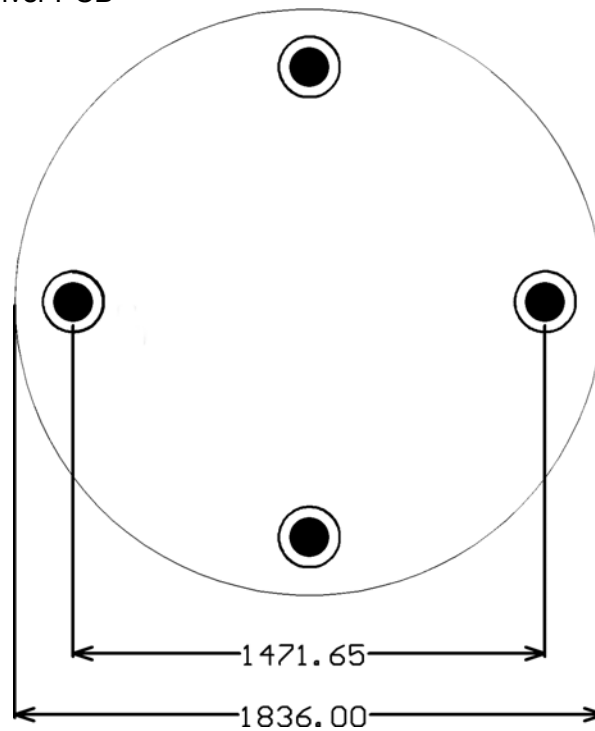


Mechanical Specifications AG3-XXXXX:

Panel Mount PCB



AC Driver PCB



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