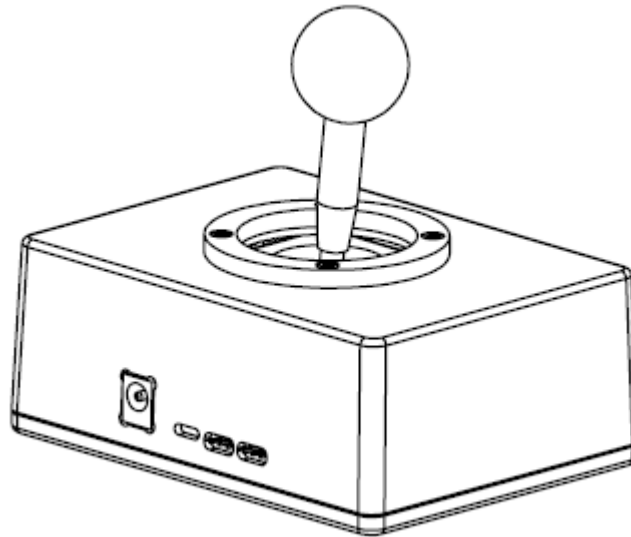


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1. PRODUCT DESCRIPTION

This controller uses a two axis joystick potentiometer to generate signals to control any hobby servo that responds to the RC PWM signal. This product is commonly used to control servos in a non-wireless condition where this product replaces a standard RC radio for simplicity and improved reliability.

2. APPLICATIONS

- Hobby Projects
- Robotics
- Toy Vehicle Control
- Camera Control
- Remote Instrumentation

3. FEATURES

- Available in a 2-axis, 2 channel version
- Available with either 90 degrees or 180 degrees of servo travel
- Rubber bumper feet
- Servo compatible output connectors
- Raw input power passed through to servos
- Barrel jack power input connector
- On/Off Switch
- Power indicator LED

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4. APPLICABILITY

This document applies to the following part numbers:

Part Number	Description	Channels	Typical Servo Travel
i03940	Precision Joystick Controller, 2 Axis	2	90 Degrees
i03919	Precision Joystick Controller, 2 Axis	2	180 Degrees

5. PERFORMANCE TABLES

5.1 INPUT

- Input power is 4-6 VDC, up to 2.5A depending on servos attached
- Barrel jack, 5.5 mm OD, 2mm ID, center positive

5.2 OUTPUT

Provides raw input power back out to power the servos. This allows the controller to power and control servos rated for higher voltages. (The supplied voltage is supplied to the servos. Do not exceed the voltage rating for the servos you are using.) The control signal is based on 0-5V logic regardless of input voltage. The control signal is 5VDC referenced to ground. It is a standard RC hobby industry compatible, pulse width modulated (PWM) signal based on a 20ms period with duty cycle varying between approximately .5 and 2.5 ms.

5.2.1 Servo Travel

Controllers are available in either a 90 degree travel version or a 180 degree travel version. (Note that travel notes apply to standard, un-modified servos). Servos must be mechanically capable of 180 degrees to work with a 180 degree controller. Using a 180 degree controller with a servo modified for 180 degrees of travel may yield undesirable results.

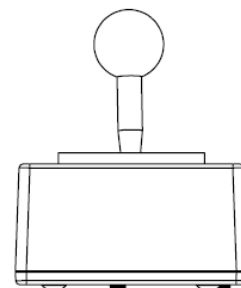
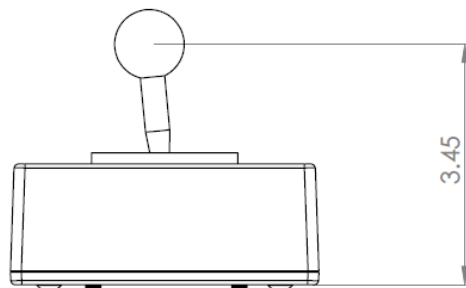
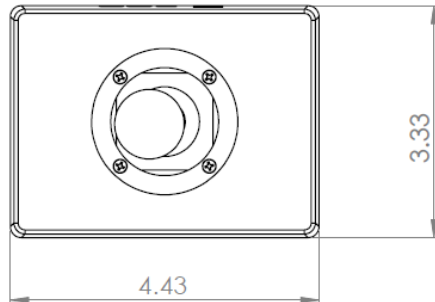
5.2.2 Signal Output Connectors

The output connectors are via 0.1 pitch header in clusters of 3 pins for each channel. Each set of pins is located adjacent to the slide control that drives it. Each set of pins is labeled with SPG for Signal, Power, and Ground. The signal wire will typically be yellow or white on servos and the ground wire will typically be black or brown while the power wire will be red. Observe proper polarity during insertion.

6. DRAWING

All dimensions in inches.

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7. RELATED PRODUCTS

The following products are related to or accessories for this product.

Part Number	Description
i02035	Power Adapter, USB to Barrel Jack
i02093	Power Adapter, Wall

8. PACKAGING DETAILS

No power supply or connection cable is included.

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9. CHANGE LOG

Revision	Date	Description of Changes
01	130514	Document Initial Release