
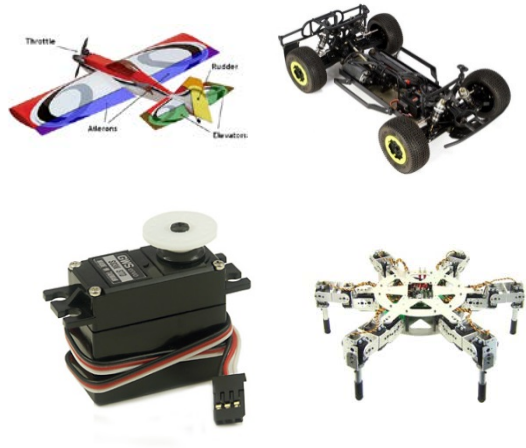
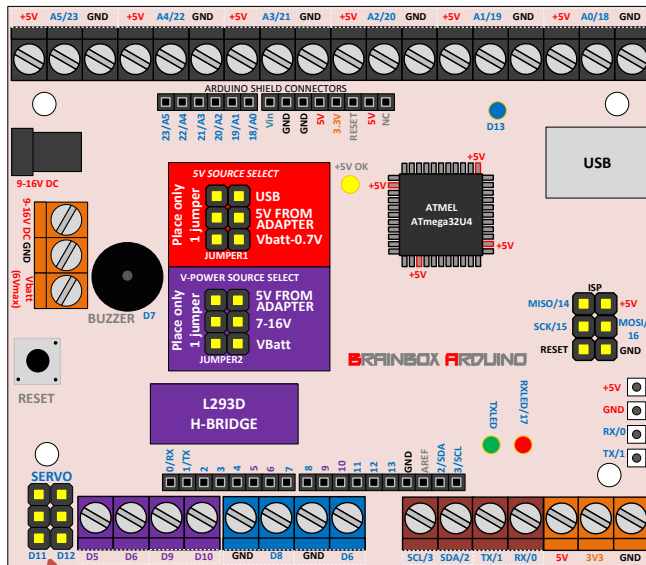


O-SERVO – HOBBY SERVO MOTORS

Required knowledge Hobby servomotor principle



Servo motor – Hitech Servo motor - Futaba servo motor



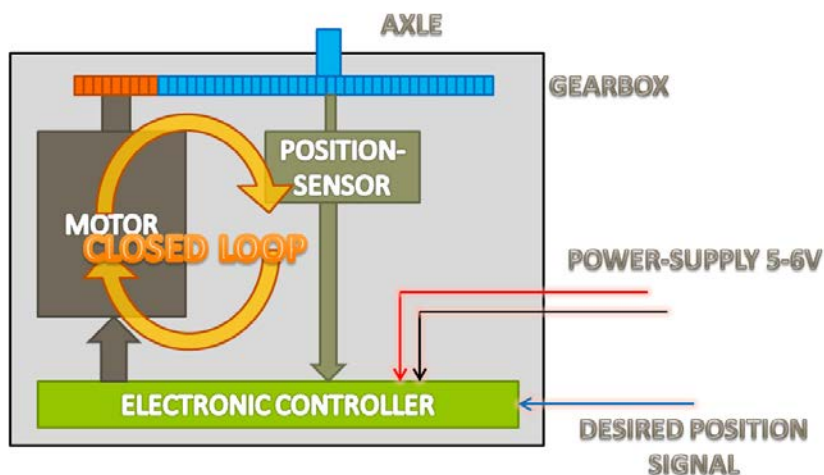
Hobby servo motors are ideal to make a relative powerful and accurate, but limited rotating movement. Our servo-motors can rotate over approximately 120° and are used in the hobby world of scale models. They are used in steering units in RC cars, as elevation and roll rudder positioning in planes and in boats and helicopters.

Our Brainbox Arduino has two servomotor outputs connectors – with 5V and GND pins - at pins D11 and D12, but any of the digital IO pins can be used to generate a servo signal.

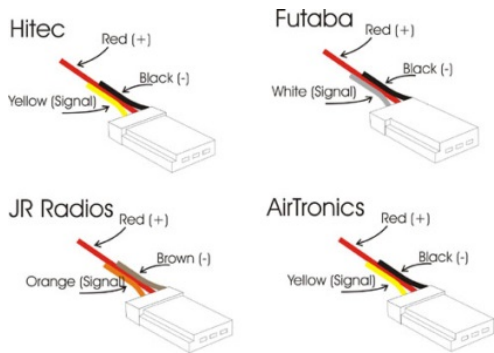
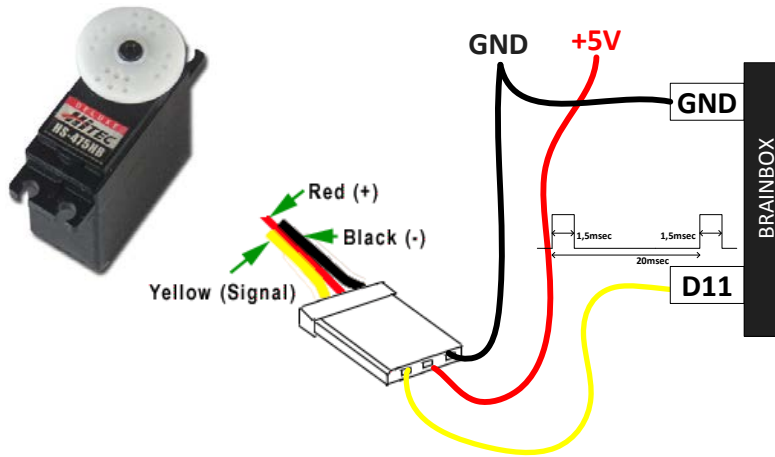
Hobby servos are available in mini and in normal size and come in many different versions and qualities. Most of them can be altered for continued rotation movement. You can find several manuals on how to alter your servomotor yourself on the internet.

Mini servo	Normal servo	Continue rotation servo
		
Conrad: 6.99€ China: 1.12€	Conrad: 10.00€ China: 4.00€	Conrad: - China: 5.00€

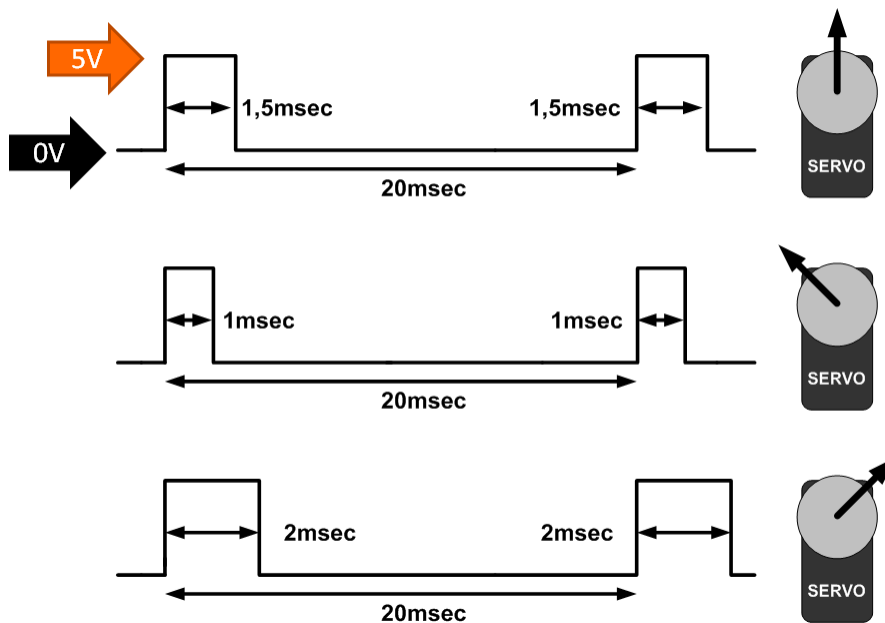
- Hobby Servos are a combination of a DC motor, a gearbox, a position sensor (potentiometer) and an electronic controller unit.



- Each servomotor is a closed loop controller. The electronic controller compares the position of the axle from the position sensor with the desired position signal. As long as both signals are not equal, the controller drives the DC motor in the correct direction until the axle is in the correct position.
- A Hobby servo is powered with a DC voltage between 5 and 6V. Depending on the load and the type, the current consumption is something between 150mA and 500mA.
- The third wire is the wire where the uC needs to generate a servo signal on to position the servo. This desired position signal does not draw any mentionable current out of the uC pin.



This servo positioning signal is kind of a PWM signal. The period is always 20msec and depending on the brand of servo the on-time of the signal varies between approximately 1 and 2msec. With a on-time of 1.5msec, the servo will move to the central position. With an on-time of 1msec it will move to the most left position, and with a 2msec on-time the servo will move to the most right position. Be aware that most hobby servo's can only turn over approximately 120°.



CODE EXAMPLE: 'O-SERVO'