

SSV5

Setup and Utilization

Manual



Highlights:

Thank you for purchasing the SSV5. The newly redesigned SSV4 presents a few improvements over the previous releases:

- Increased pulse stability, virtually no jitter around the middle point
- Red LED operation indicator – flashes when in operation and off when there is no incoming signal
- Faster processor, smaller footprint, filtered power lines
- No more reverse connections.

Overall the SSV5 is a much better and more stable product than its predecessors.

Introduction

This revolutionary device will allow you to almost double the movement of the analog servos. This version supports all Futaba, JR and all other type receivers.

The analog servos use pulse modulation in order to rotate the servo horn from left to right. The pulses occur every 20ms-22.5ms and their length may vary from 1ms to 2ms.

By electronically modifying the pulse length from 0.5ms to 2.5ms, we can increase the rotation angle of the analog servo horn from the standard 90 degrees to almost 180 degrees.

This device will measure the incoming pulses from your R/C receiver; it will amplify the pulse according to the current position of the servo, and will output a wider pulse, this way increasing the range of rotation of the servo horn.

Warning

This device will not work with Digital Servos, and use is limited to computer radios only.

Almost every analog servo has a mechanical block inside the casing. This block will limit the operation of the servo to about 165 – 175 degrees in order to protect the gears and the potentiometer inside the servo. To prevent the accidental stripping of the servo gears, before using the SSV5, you will have to set up your transmitter according to the following procedure.

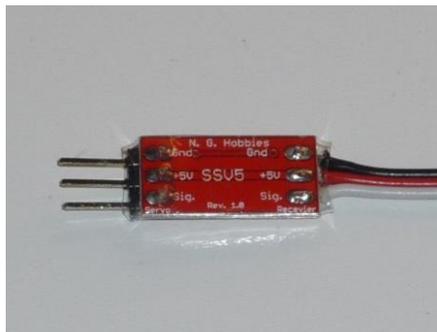
Setup Instructions

Before connecting the SSV5 to your receiver, please decide which channel you would like to use for the SSV5. In our example, we use Channel 5. On the selected channel you will have to be able to adjust the so-called Endpoints, Travel or ATV. This limits the use of the SSV5 to computer radios.

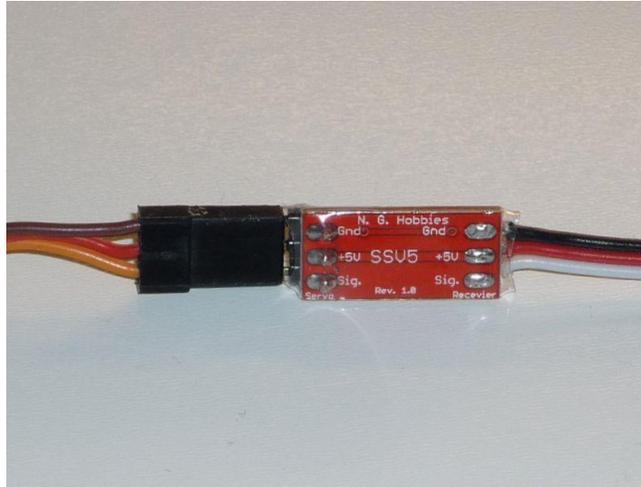
Please follow the steps below:

1. Turn on your transmitter.
2. Enter the Menu on your Transmitter.
3. Choose your Travel, Endpoint or ATV Menu.
4. Scroll down to the chosen channel (in our case, channel 5).
5. Decrease the 100% to 60-70% for both ends.
6. Save the changes and exit the menu.
7. Set the selected channel (in our case channel 5) to the middle position with the trims.

Now you are ready to connect the SSV5 to your receiver. The markings on the bottom side indicate the correct direction of the servo wire: Black is Ground, Red is the Power and White indicates the Signal wire.



Important: The SSV5 is programmed to work with a standard 22.5ms PPM frame. If your transmitter is set to send PPM other than the standard 22.5ms PPM frame, the operation of the SSV5 might be erratic. Also the SSV5 will ignore PPM length outside the 1ms-2ms range. Reversing the servo connection may damage the SSV5 and render it unusable.



Please make sure that you always double-check the correct connection of the servo. It should be connected as it is shown in the picture above.

Some servos use differently coloured cables. As a rule of thumb, the darker color (usually black or brown) is always the Ground, the middle (always red) is the Positive lead, while the lightest colour (usually white, yellow or orange) will indicate the Signal wire.

Once you have correctly identified the wires, please plug the SSV5 into your R/C Receiver. The SSV5 uses standard wiring, which corresponds to the above standard. The black is the Ground, the red is the Positive, and the white/yellow is the Signal wire.

Once connected, please turn on your transmitter first, and then your receiver.

Move the stick on the transmitter corresponding to the SSV5's selected channel from left to right just a little bit, so you can verify the servo's response. If it is not moving in the correct direction, please reverse the channel on the transmitter.

Once you set the correct direction, please pull the stick all the way to one end for a second and listen to any unusual noise from the servo. If there is none, move the stick to the other end, do the same. If you hear any unusual noise of stress, cracking, please release the stick immediately, and decrease your endpoints to 50% or less, as described above.

If there are no unusual noises, then you are still inside the limits of the servo's physical rotation range. Now you can maximize the range achieved by using the SSV5. Enter the Menu on your transmitter; go to the Endpoint, Travel or ATV Menu, and choose the SSV5's channel. Move the stick to one end, and slowly increase the value. SLOWLY!!! Carefully watch the servo. If you see any signs of stress, hear louder than usual hum coming from the servo then you have reached the physical limit of the rotation. Slowly decrease the value with 4-5 units, and repeat the above steps in the other direction. Once finished, exit the Menu, and enjoy the properly set SSV5.

In case the SSV5 jitters at the middle point, just adjust the middle with one or two clicks to the left or right from the trim or sub-trim until it settles, and the jitter disappears.

Technical Specifications

Supply Power:

SSV5 is powered from the R/C receiver and it is designed for a maximum of 6V operation. In case you use more than 6V to power your receiver, please do not use the SSV5.

Pulse range:

The SSV5 is designed to stretch the pulses coming from the receiver within the following limits:

Position	Receiver Output Pulse Length	SSV5 Output Pulse Length
Lowest	1.0 ms	0.5 ms
Middle	1.5 ms	1.5 ms
Highest	2.0 ms	2.5 ms

The above table represents absolute maximum values.

Connection Cable Length:

Standard Hitec 24 gauge servo wire approximately 6" (inches) or 15cm (centimetres).

Receiver Connector type:

Standard 3 pin Hitec servo connector.

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