DigiFailSafe

Programmable-position Fail-safe with Variable-gain Servo Travel controller

Introduction

Thank you for your purchasing a DigiFailSafe. Using this device will position your servos in a pre-programmed position in the event of signal loss or interference, greatly increasing the chance of regaining control and helping prevent an uncontrolled crash. Using a state-of-the-art microcontroller with advanced software algorithms, DigiFailSafe allows you to program the position that the servos will assume in the event of signal loss or interference. A typical setup for model power planes would be throttle to idle and right (or left) bank, although similar loss avoidance settings may be programmed for all types of Radio Controlled (RC) models. In addition, DigiFailSafe provides a variable gain servo travel controller which allows you to program the maximum amount of movement the servos 'travel' (or rotate), between 1% and 120% of normal servo movement (connected directly to the receiver).

Features

Programmable servo position fail-safe for 2 channels.

- Fail-safe triggers on detection of interference.
- Servo gain programmable from 1% to 120% of normal throw.
- Settings stored during power-off.
- Extremely compact and light-weight.

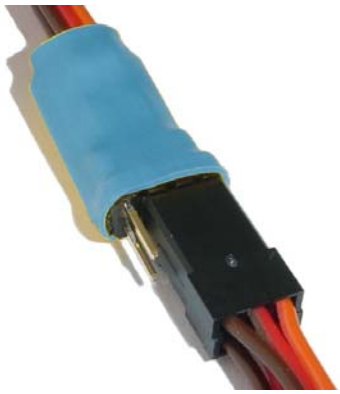
Technical Information

Operating Voltage	2.7 V to 6.0 V
Operating Temperature	-20°C to 80°C
Current Consumption	4.0 mA
Weight	3.0 g
Size	16 x 10 x 8 mm
Fail-safe Position	Any position from 1% to 120% of normal movement
Variable Gain	From 1% to 120% of normal movement

NOTE: ***Supplying more than 6 volts to the device could cause permanent damage. Please only use 4 cell battery packs.***

Connections

The figure on the right illustrates how servos should be connected to DigiFailSafe. Note the programming pins to the left of the servo connectors. These pins should have the jumper across them during programming.



DigiFailSafe is connected to the receiver as servos would normally be. Either one or both channels may be used. If only a single channel is being used, be careful to get the unused servo lead out of the way of moving parts (servos or motors).

PROGRAMMING

Programming DigiFailSafe is done in 2 phases. PHASE 1 allows you to set the fail-safe position between centre position and 120% of normal maximum throw, either above or below centre position. PHASE 2 allows you to set up the variable gain which may be set between centre position and 120% of normal movement. Before you being this setup procedure, make sure your transmitter is on with the trims centred and your receiver is off with the programming jumper inserted across the programming pins.

NOTE: DigiFailSafe may be used with 1 or 2 channels. If you are only using 1 channel, please make sure the unused connector is out of the way of all moving parts.

PHASE 1:

1. Turn on your receiver.
2. Use your sticks to set the fail-safe position you require. This will be the position your servos move to when there is a loss of signal or interference is detected. If you hold your stick just above or below the neutral (centre) position, the corresponding servo will move in the corresponding direction to a maximum of 120% normal movement. Release the stick when the servo has reached the required fail-safe position. If you are using 2 channels, make sure you set the fail-safe position for both channels.
3. With the power to the receiver and transmitter remaining on, remove the programming jumper. There will be a 1 second delay and the servos will move to the centre position.

PHASE 2:

4. With the servos at the centre position, and in the same way you set up the fail-safe position (step 2), use your sticks to set the maximum amount of movement (throw) required from the servo(s). During normal operation, this is the maximum throw your servo will attain when the corresponding control stick is at maximum reach (at the extreme position). Make sure you have set up the required maximum servo travel for both channels if you are using 2 channels.
5. Once you have set the desired maximum throw, keeping power to the receiver and transmitter on, insert the programming jumper onto the programming pins.
6. Power off the receiver.
7. Remove the programming jumper.

You are now set up and DigiFailSafe will have stored your settings to memory.

NOTE: This procedure may be done at any time when you wish to modify the fail-safe position or servo gain (maximum throw).

FINAL CHECK

Turn on you transmitter and then receiver and move you stick(s) from on extreme to the other. Make sure the servo throw for each channel you have set up moves to the programmed maximum position. Now turn off the transmitter and make sure that the servos move to the programmed fail-safe position. Turn your transmitter back on and your servo(s) should resume normal operation (under the control of the transmitter). If you have another transmitter on the same frequency, turn it on and you will notice the servo(s) move to the fail-safe position. This step is not necessary if you don't have 2 transmitters on the same frequency.

Attention: DigiFailSafe is not for use on PCM receivers. PCM systems have a built-in failsafe which is incompatible with DigiFailSafe.