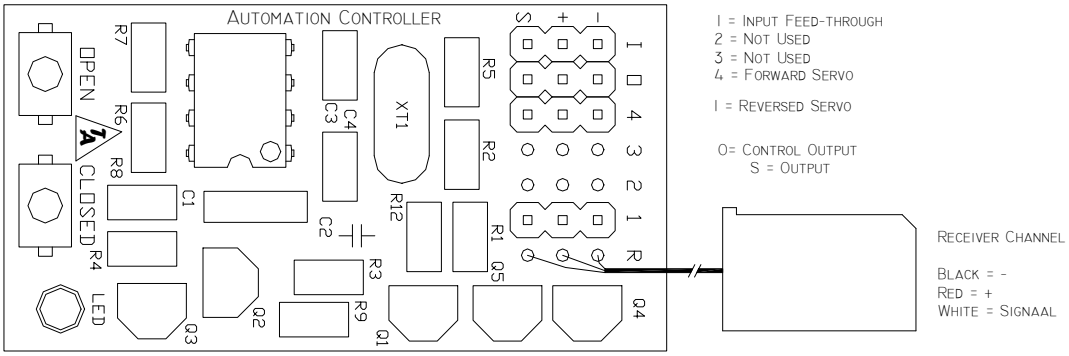
Thomson Automation

Input: Futaba, Output: Pin Headers

Flaps Controller

Forward Output Channel
Reverse Output Channel
Adjustable Speed
Extra Digital Control Output



User's Guide

Introduction

The Thomson Automation flaps controller is a light weight automation controller suitable for use in radio-controlled airplanes and other model vehicles using standard radio-control servos. It provides two speed controlled servo outputs. One output is reversed. The input is a standard servo control signal and the outputs follow the input at an adjustable speed. Speed settings are stored in permanent memory. Channel 1 is connected directly to the receiver input for use as a Y harness. Channels 4 and I are typically used for port and starboard flaps in airplanes with two separate servos.
The flaps controller is intended for hobby use only.

Connecting the module

4-Cell; 4.8V systems

If everything is connected to one 4-cell power source simply plug the servos directly into the module and the receiver plug into the receiver as in the connection diagram. A "y" harness can be used to connect 2 or more servos to one output channel. To provide servo power from a secondary battery, disconnect the + or middle wire in the receiver cable by cutting it or removing it from the connector shell and connect the secondary battery to channel 2.

5-Cell; 6.0V or higher voltage systems

For systems with 5 or more cells a reduced voltage must be supplied to the module. A power box is available for use with higher voltage systems. This provides full voltage to the servos and a reduced voltage to the module. It also buffers the receiver and servo signals to provide signal level matching. See the description in the Landing Gear Control user's manual.

Control Output

A switching signal for controlling other devices is available at the 'S' pin on the "O" connector. See connection diagram 1 for connection information. The maximum current is 100ma. The output will drive in both + and – directions.

Pushbuttons

These are labeled "Open" and "Closed and are used to set the speed of the connected servos. To activate the speed adjustment mode, press and hold both buttons while turning on the power to the module.

The buttons should not be pushed while the module is in operation. Doing this can cause the module to stop working. To recover from this, turn the power off and them back on.

Speed adjustments can cause movement of the forward servo. Disconnect the forward servo during speed adjustments.

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Indicator LED

In settings modes the LED flashes to indicate the speed setting values. Since it is connected to the forward servo output, it shines at reduced brightness during normal operations and during settings can cause servo motion to the servo control pulses.

Setting servo speeds

To change the speed of the servos:

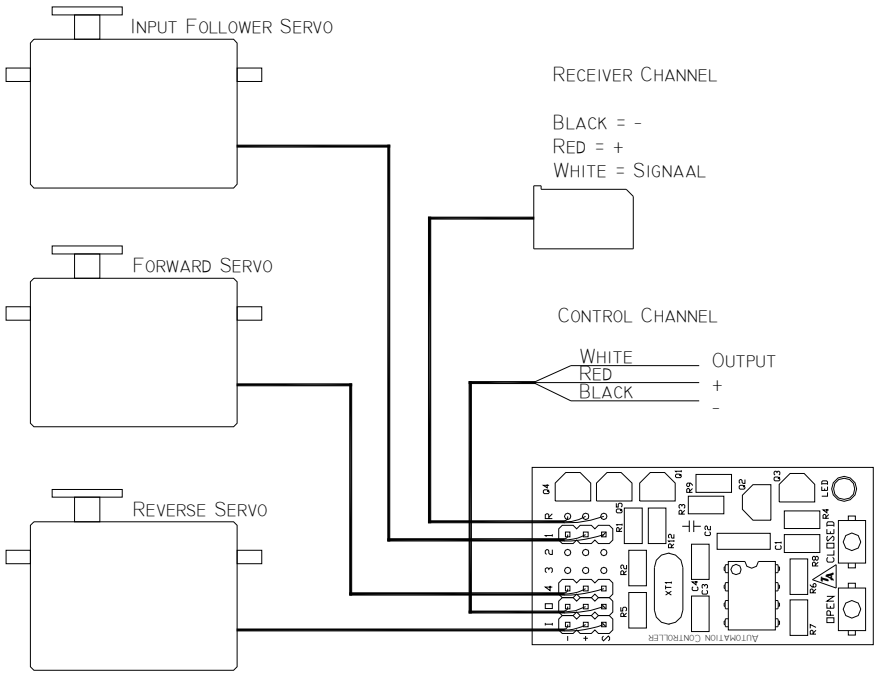
1. Turn off the power.
2. Push and hold both pushbuttons.
3. Turn the power back on.
4. After the LED flashes once, release the pushbuttons.
5. Push the CLOSED pushbutton to increase the speed or the OPEN pushbutton to decrease the speed.
6. The LED will flash to indicate the new setting. More flashes = faster speed.

The new settings are immediately stored in permanent memory.

Specifications

Name	Flaps Controller
Part nr.	1040
Hardware rev	1.1
Firmware rev	6.1
Supply Voltage	3.5V – 5,5V
Supply current	3 ma
Servo Channels	1 in, 3 out (1 Is An Input Follower)
Control Channels	1 Output
Maximum Output Current	100 ma (Landing Lights)
Control Input Voltage	3.5V – 5.5V
Receiver Control Signal	1.25V – 5V pulse
Weight without connectors	9 gm
Board Size	25 cm X 48 cm
Cable Length	29 cm
Slowest Traverse Time:	12 Sec
Fastest Traverse Time:	Per receiver input

Connection Diagram



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