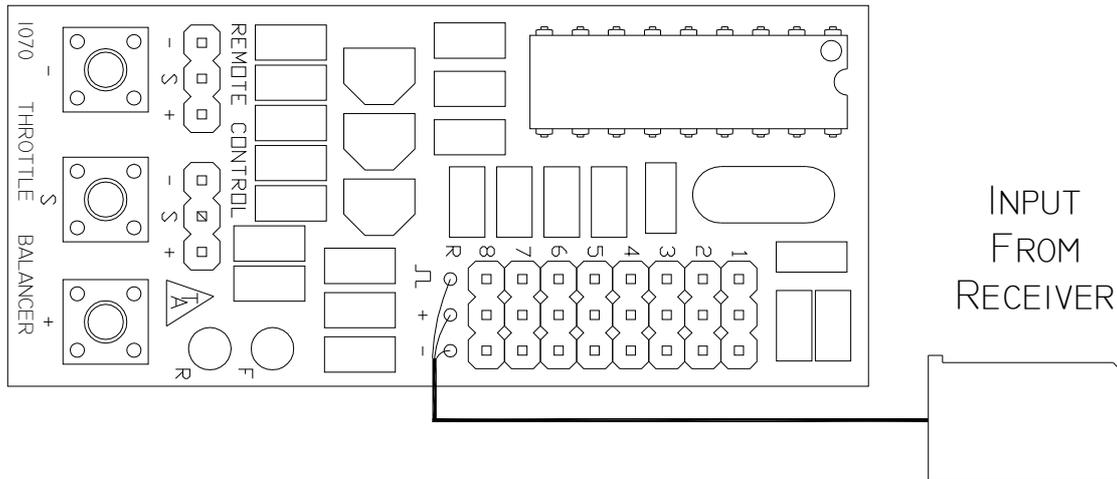


**Thomson
Automation**

Input: Futaba Connector, Output: Pin Headers

Servo Balancer / Throttle Controller

Adjustable End And Center Points
Reversing
7 Servo Outputs
Remote Lights And Pushbutton Option



User's Guide

Introduction

The Thomson Automation Servo / Throttle Balancer is a light weight controller suitable for use in radio-controlled airplanes and other model vehicles using standard radio-control servos. It can be used to balance up to 7 servos operating from one receiver channel. The unit features individual end and center adjustments and reversing for 7 of the output channels. The eighth channel is a pass-through from the input. All settings are permanently stored in the module and not lost with power-down.

Connecting the module

Servos are plugged directly into the headers. Observe the polarity shown on the connection diagram. The cable is plugged into the receiver channel.

Remote Control

A remote control module can be plugged into the unit. The remote control allows the pushbuttons and indicator lights to be mounted 30cm away from the module.

Pushbuttons

The + and - pushbuttons are used for adjusting the center and endpoints of travel and other options. The S pushbutton is used to select the servo to be adjusted. If the + or - end of the trim range is reached, the + or - pushbutton will have no more effect.

Programming And Balancing The Servos

To enter the adjustment mode press the 'S' pushbutton. The 'F' lamp will flash to indicate which servo is selected for adjustment. Each time the 'S' pushbutton is pressed the next servo will be selected. The + and - pushbuttons will trim the selected servo. The trim adjustment will be automatically applied to the correct end or center of the servo range depending on the current position of the servo. The 'R' LED indicates that an end position will be trimmed. Trim the center position first because it will be applied to the whole range. After trimming the center position, move the servo to one end of the range and adjust the position as needed. Move the servo to the other end and adjust the position again. If the 'R' LED is on then the adjustment will be applied to the end of the travel. If the Center is adjusted after the ends, check the ends again because the center adjustment will affect the ends. Repeat this procedure for all the servos.

Reversing A Servo

To reverse the operation of a servo, first select that servo with the 'S' pushbutton. Then push both the + and – pushbuttons at the same time. The new reverse setting will be saved after 5 seconds.

Setting The Trims To Zero

To set a servo trim to the default value of zero, first select that servo with the 'S' pushbutton. Then push all three buttons. To avoid reversing the selected servo or selecting the next servo, push and hold first + or -, then 'S' then the last pushbutton. This will set all three trims for that servo to zero. The new trim settings will be saved after 5 seconds.

Indicator LEDs

'F' LED

The 'F' LED flashes to indicate the selected servo. It also flashes quickly three times when new trim values are being permanently stored.

'R' LED

The 'R' LED lights when the input is not in the center of it's range. This is to indicate where the trim adjustment is being applied.

Permanent Storage Of Trim Values

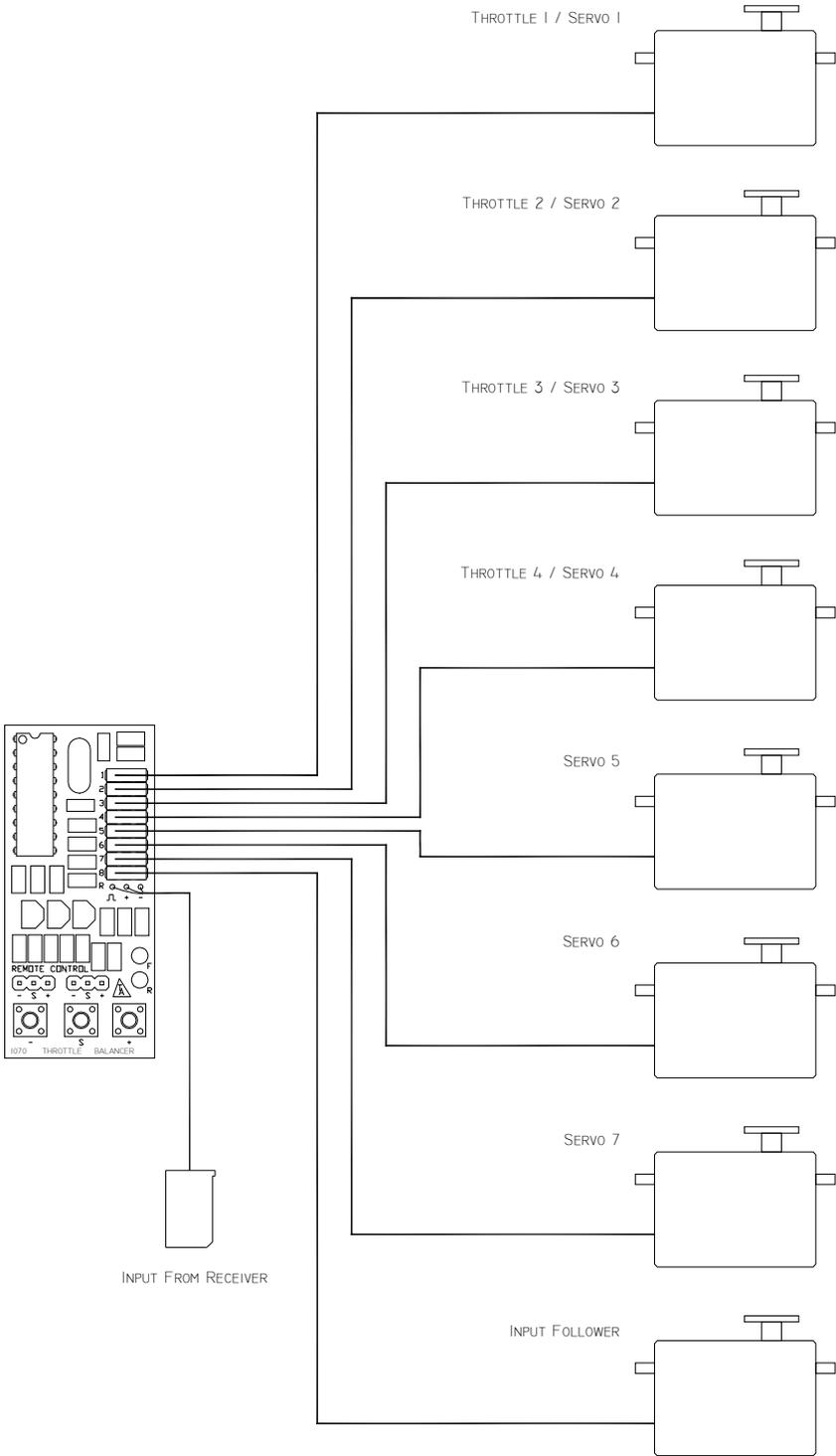
After trimming adjustments are made, if no buttons are pushed for 5 seconds, the new trim values will be permanently saved. The 'F' lamp will flash 3 times after the save operation.

Specifications

Name	Throttle Balancer
Part nr.	1070T
Hardware rev	1.4
Firmware rev	1.5
Supply Voltage	3.5V – 6.0V
Supply current	3 ma
Servo Channels	1 in, 8 out (Output 8 Is An Input Follower)
Indicator Channels	2
Receiver Control Signal	1.25V – 5V pulse
Weight	29 gm
Board Size	27 mm X 60 mm
Cable Length	29 cm

The throttle balancer is intended for hobby use only. Thomson Automation is not responsible for any damage or injury that occurs through the use of this product.

Connection Diagram



Make sure the + and – polarity of your servo cable matches the pins on the module