

SUPER MULTI-ROTOR CONTROLLER

INTRODUCTION



Thank you for purchasing the Hobby People Super Multi-Rotor Controller. The Super Multi-Rotor Controller is small and lightweight, and designed for use with 250 to 600 size 4-axis and 6-axis multi-copters. It supports configurations for four different flight modes and four different receiver types, and features a built-in auto-stabilization function and acceleration sensor for stable, controlled flight. The Super Multi-Rotor Controller is easy to set up and calibrate and features an adjustable gain dial to fine-tune the sensitivity of your model's flight controls. The Super Multi-Rotor Controller includes double-sided foam mounting tape, two pre-wired flight control adapters and a gain adjustment tool.

FEATURES

- Small and Lightweight - Designed for Use with 250 to 600 Size 4-Axis and 6-Axis Multi-Copters
- Built-In Auto-Stabilization Function and Acceleration Sensor for Stable, Controlled Flight
- Supports Four Different Flight Modes: 'X4', '+4', 'X6' and 'HEX6'
- Compatible with Standard, S-Bus, DSM2 and DSMX Receivers
- Adjustable Gain Dial to Fine-Tune Flight Sensitivity
- Easy to Set Up and Calibrate

SPECIFICATIONS

- Operating Voltage Range: 3.6V to 8.4V
- Operating Current: 60mA
- Processor: 32-Bit ARM®
- Output Rate: 360Hz
- Dimensions: 1.69 x 1.14 x 0.51" (43 x 29 x 13mm)
- Weight: 0.31 Ounces (9g)

CAUTIONS AND WARNINGS

 Prior to installing and setting up your new Super Multi-Rotor Controller, it's important that you read, understand and abide by the cautions and warnings in this section. Failure to follow this advice may result in damage to the Super Multi-Rotor Controller, your model's other electronics or even injury to yourself or others.

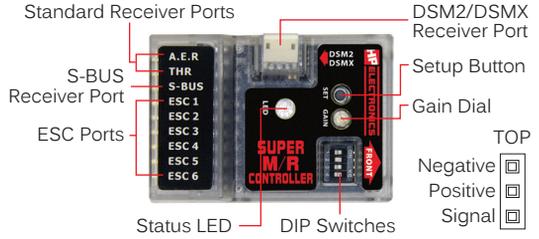
- Remove the rotor blades from your model prior to the initial setup and calibration process. This will ensure there can be no injury or other damage should the motors power up unexpectedly. Only after the setup and calibration process is complete and you're fully aware of how the Super Multi-Rotor Controller locks and unlocks the motors, should you install the rotor blades.
- Prior to connecting the Super Multi-Rotor Controller, your transmitter must be set up correctly and the throttle range of each of your ESCs must be calibrated. Do not make any connections to the Super Multi-Rotor Controller until told to in this User's Guide.
- The Super Multi-Rotor Controller supports the use of different receiver types, however, only one receiver type should be used at any one time.
- For the best performance, the Super Multi-Rotor Controller should be mounted on a flat, level surface directly in the center of your model. In addition, the front of the Super Multi-Rotor Controller should be toward the front of your model. Use the double-sided foam tape included to provide some measure of vibration isolation. Do not hard-mount the Super Multi-Rotor Controller.
- The Super Flight Controller is compatible with PWM (Pulse Width Modulation) ESCs only. Do not use any other type of ESC (not common among hobby grade ESCs). In addition, your ESC's Governor Mode and Brake Mode (if supported) should be disabled.
- Increasing the gain too much can make your model very difficult to control and isn't recommended.
- When the motors are unlocked, they will spin up at low throttle to stabilize your model in preparation for flight. Be aware of this at all times to help prevent any chance of injury.

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OVERVIEW AND MOUNTING

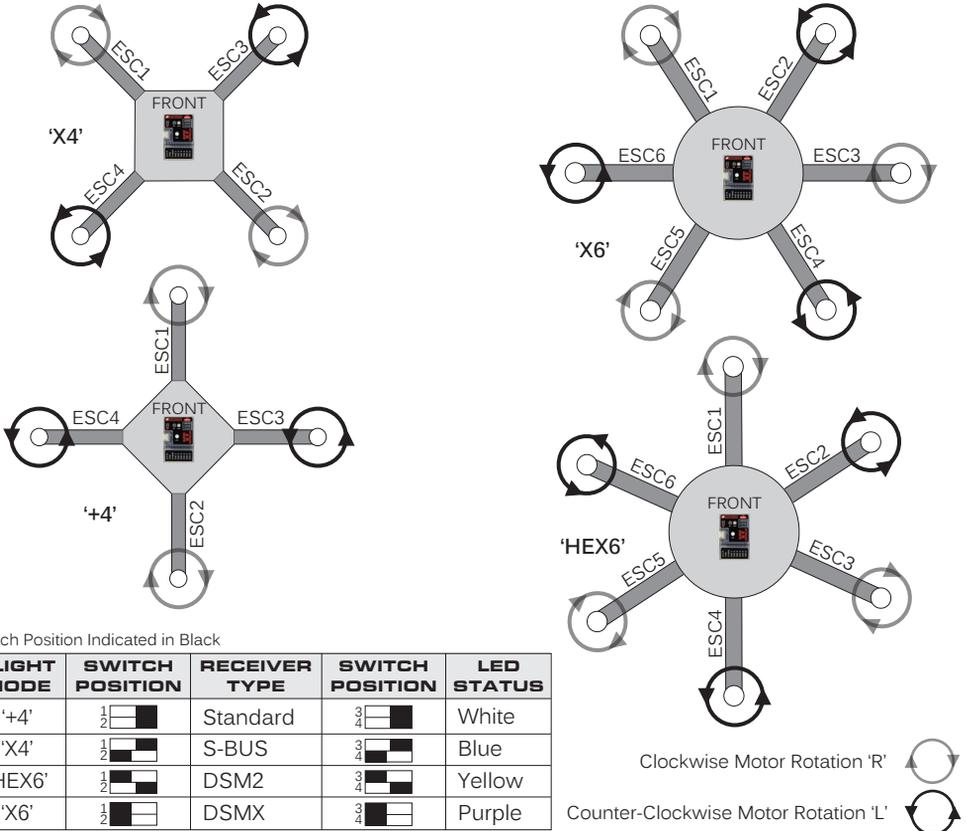
Mount the Super Multi-Rotor Controller into your model, using the piece of double-sided foam tape included.

! Make sure that the front of the Super Multi-Rotor Controller is orientated toward the front of your model and that it's mounted on a flat, level surface, directly in the center of center of your model.



FLIGHT MODE AND RECEIVER TYPE SETUP

The Super Multi-Rotor Controller supports four different flight modes and four different receiver types. Using a toothpick or similar non-metallic instrument, adjust DIP switches 1 and 2 to choose the flight mode that matches your multi-copter's setup (illustrated below), then adjust DIP switches 3 and 4 to choose the receiver type that matches the receiver type you're using. See table below.



Switch Position Indicated in Black

FLIGHT MODE	SWITCH POSITION	RECEIVER TYPE	SWITCH POSITION	LED STATUS
'+4'	1: <input type="checkbox"/> 2: <input checked="" type="checkbox"/>	Standard	3: <input type="checkbox"/> 4: <input checked="" type="checkbox"/>	White
'X4'	1: <input checked="" type="checkbox"/> 2: <input type="checkbox"/>	S-BUS	3: <input checked="" type="checkbox"/> 4: <input type="checkbox"/>	Blue
'HEX6'	1: <input checked="" type="checkbox"/> 2: <input type="checkbox"/>	DSM2	3: <input type="checkbox"/> 4: <input checked="" type="checkbox"/>	Yellow
'X6'	1: <input type="checkbox"/> 2: <input checked="" type="checkbox"/>	DSMX	3: <input type="checkbox"/> 4: <input checked="" type="checkbox"/>	Purple

! Do not make any connections between your receiver or ESCs and the Super Multi-Rotor Controller until after setting up your transmitter and calibrating the throttle control range of each of your ESCs. For more information, see the Transmitter Setup and ESC Calibration section on the next page.

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TRANSMITTER SETUP AND ESC CALIBRATION

Prior to making any connections to the Super Multi-Rotor Controller, you must set up your transmitter and calibrate the throttle control range of each of your ESCs.

Transmitter Setup:

The transmitter you choose should be a 4-channel or more computer radio. Create a new standard aircraft model (normal wing, normal tail, one aileron servo, etc.) and ensure all programming values are set to their default values. Trim and sub-trim should be zero, all mixing controls should be turned off, throttle hold should be disabled, all channel high and low EPAs should be set to -100% to +100% (or both 100%, depending on transmitter brand) and servo reversing values should be set as shown in the table. In addition, if you're using an S-BUS, DSM2 or DSMX receiver, make sure that the output channel sequence matches what's shown in the table.

BRAND	AILERON	ELEVATOR	RUDDER	THROTTLE
Airtronics	NOR	NOR	NOR	NOR
JR/Spektrum	NOR	NOR	NOR	NOR
Futaba	REV	REV	REV	REV
Hitec	REV	REV	REV	REV
S-BUS	CH1	CH2	CH4	CH3
DSM2/DSMX	CH2	CH3	CH4	CH1

ESC Throttle Range Calibration:

Bind your transmitter and receiver following the instructions in your transmitter User's Guide. One at a time, connect each ESC/Motor to your receiver's throttle channel port and calibrate the ESC's throttle range and verify that the motor is throttling up and down as expected. Don't worry about the direction the motor is turning yet. That can be changed (if necessary) after all connections are made.

CONNECTIONS

Following the diagram on the previous page that matches the model type you have, plug each of your model's ESCs into the matching ESC ports in the Super Multi-Rotor Controller. Next, plug the included throttle adapter between the THR port in the Super Multi-Rotor Controller and the throttle port in your receiver, then plug the flight control adapter between the A.E.R. port in the Super Multi-Rotor Controller and the aileron (yellow wire), elevator (red wire) and rudder (brown wire) ports in your receiver. When making these connections, pay careful attention to the polarity of the different connections, both at the Super Multi-Rotor Controller (refer to the pin-out diagram in the Overview and Mounting section) and your receiver. The aileron, elevator and rudder connectors are single wires and should be connected to the signal pin in those receiver channel ports.



DSM2 and DSMX Receiver Binding:

If you're using a standard or S-BUS receiver, bind your transmitter and receiver pair following the instructions in your transmitter User's Guide. If you're using a DSM2 or DSMX receiver, follow the steps below to bind the transmitter and receiver pair along with the Super Multi-Rotor Controller.

- 1) Connect your receiver to the DSM2/DSMX Receiver Port, then set DIP switches 3 and 4 for receiver type Standard or S-BUS. Plug your model's flight battery into its power adapter to power ON the Super Multi-Rotor Controller and wait for 2 seconds, then disconnect the flight battery.
- 2) Set DIP switches 3 and 4 to match the receiver type you're using (DSM2 or DSMX), then plug the flight battery in again to power ON the Super Multi-Rotor Controller. Once your receiver's bind LED begins to flash, turn on your transmitter to complete the binding procedure.

TRANSMITTER CALIBRATION

When you use the Super Multi-Rotor Controller for the first time or change to a new or different receiver, you must calibrate the Super Multi-Rotor Controller to your transmitter.

- 1) Pull the throttle stick all the way back and center the elevator/aileron stick. Turn your transmitter ON, then plug your model's flight battery into its power adapter to power ON the Super Multi-Rotor Controller. The Status LED will flash twice to indicate what flight mode and receiver type is configured, then turn solid green, indicating the motors are locked.

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TRANSMITTER CALIBRATION, CONTINUED....

- 2) Press and HOLD the Setup button to start the calibration process. The Status LED will go out. Continue to HOLD the Setup button until the Status LED illuminates again (after ~ 5 seconds). Release the Setup button. The calibration process is now complete.

CONTROL SENSOR CALIBRATION

The control sensor should be calibrated after installing the Super Multi-Rotor Controller or if your model seems unusually difficult to control or unstable.

- 1) Set your model on a flat, level surface. Do not move it during the calibration process. Pull the throttle stick all the way back, then turn your transmitter ON. Plug your model's flight battery into its power adapter to power ON the Super Multi-Rotor Controller. The Status LED will flash twice to indicate what flight mode and receiver type is configured, then turn solid green, indicating the motors are locked.
- 2) Move and HOLD the throttle stick all the way forward and all the way left (full throttle and full left rudder position). The Status LED will go out. Continue holding the throttle stick in this position until the Status LED illuminates green again (after ~ 5 seconds). Return the throttle stick to its lowest position. The calibration process is now complete.

GAIN ADJUSTMENT

The gain dial is used to fine-tune the sensitivity of your model's flight controls. For the first few flights, we suggest using a low value, then increase the gain value on successive flights until you're happy with the results. Decreasing the gain value (turn counter-clockwise) will reduce the control sensitivity and increasing the gain value (turn clockwise) will increase the control sensitivity. Increasing the gain too much can make your model very difficult to control and isn't recommended.

LOCKING AND UNLOCKING THE MOTORS

To Unlock the Motors - With the throttle stick pulled all the way back, push the throttle stick all the way to the right. Hold it in this position until the motors spin up at low speed and the Status LED flashes green. You now have control over the throttle.

To Lock the Motors - With the throttle stick pulled all the way back, push the throttle stick all the way to the left. Hold it in this position until the motors shut off and the Status LED is solid green.



If the motors do not lock and unlock, check the throttle channel high and low EPAs. They should be -100% to +100% (or both 100%, depending on transmitter brand). In addition, the unlock and lock controls are opposite of what's described, reverse your transmitter's rudder channel.

CHECKING THE FLIGHT CONTROLS

For the first flight of your model, check that each motor is turning the correct direction, as shown in the diagram on page 2 that matches the model type you have. If one or more motors is turning the wrong direction, swap any two of the ESC/motor wires to change the motor direction. Next, check the flight control directions to ensure they're correct. If necessary, change the transmitter servo reversing settings to correct any flight control direction errors.

SERVICE AND SUPPORT

If you should have trouble with any of the steps listed in this User's Guide, have any questions, or require additional information, please contact our Customer Service Center at the address below:

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Fountain Valley, CA 92708

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