GA250 Micro Gyro User Manual

Ga250 is a high-performance advanced AVCS/MEMS gyro, specially designed and optimized for your RC helicopters. It's with Very small size and Very light weight. It's easy in setting, practical functions, wide scope of applicable servos and superior head-lock performance, even for your hard 3D application.

Technical Features

- Sensor: MEMS
- System control: AVCS (Angular Vector Control System).
- Dual-gain function: two operational modes can be selected through the transmitter: AVCS mode and Rate mode.
- Compatible with all tail servos, include 1520us, 760us and 960us.

Technical Parameters

1. Operating voltage: DC 3.0 ~ 9.0V
2. Operating current: 20mA(At 5.0V)
3. Operating temperature: -15℃ ~ 60℃
4. Dimensions: 21 × 21 × 10mm
5. Weight: 8.0g (Include Connectors and Wires)

Components Functions

Gain Channel Plug(Red)

Tail Channel Plug (Black)

Tail Servo Joint
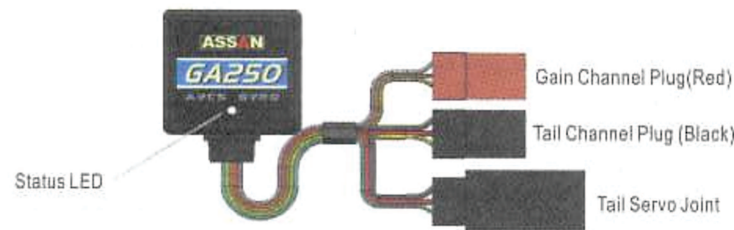
Status LED

Status Light

	Status light	Describe
Operating Mode	Blue Fast Flashing	Gyro Calibrating
	Steady Blue Light	AVCS Mode
	Blue 2 Flashing	AVCS Mode, Rudder stick not centered
	Light Down	Rate Mode
Error Codes	Red Slow Flashing	Gyro not receiving gain signal. Please checking the wire and plug
	Blue Slow Flashing	Gyro not receiving rudder signal. Please checking the wire and plug

Setting Up Your Gyro For The First Time

Follow the steps below in the specified order to successfully deploy your gyro.

- Fix the gyro on your model: please stick the gyro to the stable place of the helicopter with the double-sided adhesive tape. If there is a high vibration environment, please plus a steel plate to help to reduce the influence.
- Connect the gyro to the receiver, don't connect the tail servo to the gyro at this time.
- Ensure that the transmitter trims and sub-trims are set to zero and that collective pitch to tail pitch mixing is disabled.
- Power on your Rx and gyro.
- Select the correct servo type as describe in the Servo Type Selection section of this guide.
- Power off your gyro.
- Connect the servo to the gyro then power on it.
- Follow the manual to set the gyro direction, high servo endpoint and low servo endpoint.
- Quit setting and back to stand by way.
- Adjust gyro gain via your transmitter
- Confirm all things and ready to fly.

Servo Type Selection

GA-250 was designed to work with all modern tail servos, There have some different type servos, and when use wrong setting, you will broken your servo or not working correct. so, please do this job in the first step.Here is the way to access the servo configuration mode. Power on your Gyro and when it Blue flashing, toggling the gain switch three or more times quickly in your radio. You have Servo Type Setting mode now. By pull the rudder stick left or right, you got different type. The number and the colors of flashed indicates the currently selected servo type.

Oper ation	Light Status	Type	Model List (not all)
Move the rudder stick to left ◀ ▶ Move the rudder stick to right	●	1520us / 333Hz	Futaba S9253, S9254, S9257, S9650, S3153, S3154, BLS254 JR 8900G, 3400G, 3500G Align DS410, DS420, DS510, DS520, DS610, DS620, DS650 Hitec 5925MG, 6965HB, 5083MG
	●●	760us / 560Hz	Futaba BLS251, S9251, S9256, MKS DS8910, BLS980
	●●●	1520us / 250Hz	JR 2700G, 8700G, 810G, Sky HDS-577, HDS-877
	●●●●	960us / 333Hz	LogicTech 6100G, 3100G, Hitec HSG-5083MG
	●●●●●	1520us / 70Hz	(Default)

Note: if your tail servo is not listed in the above table, please ask your supplier or visit the manufacture's assist site to get support information. Incorrect setting may damage the servo or maybe loss tail control during flight.
After you changed and got right servo type , you need exit Servo Type Selection by simply power off the gyro.

Configuration

Connected your tail servo to the gyro, power on your system. After Gyro calibrated. Follow the instruction, you can adjust the gyro direction, high servo endpoint and low servo endpoint as described below.
Note: Blue Lighting number means in which setting mode, Red Lighting number means what's your choice.

Step 1: Gyro Direction Reversion

Pull your transmitter's rudder stick to the left end or to the right end, toggling the gain switch three or more times quickly. Your gyro's red and blue both lighting steady, then release your stick to neutral. Toggling the gain switch to Rate and AVCS one time, you will have in gyro direction reversion setting.

Operation	← Move the rudder stick to high end	Move the rudder stick to low end →
Light Status	● ●	● ●●
Gyro Direction	Normal	Reverse

The gyro has two move directions, Normal and Reverse. Rotate the helicopter at least 90 degrees counter-clockwise, in an attempt to oppose the rotation and maintain the helicopter heading the gyro should have now moved the tail blades in the same manner as if right rudder was applied, the direction of the gyro is correct. If its not, please change the setting.
The step above is critical. If the gyro direction is wrong, the helicopter may yaw at high speed and cause an extremely dangerous situation when taking off!

Step 2: Adjust High Servo Endpoint

When set gyro direction ok, toggling the gain switch to Rate and AVCS one time, you are in Adjust High Servo Endpoint setting. Using the Rudder stick adjust the servo position until you achieve maximum tail rotor pitch without binding on the mechanical limits. When satisfied, toggle the gain switch to Rate and AVCS one time to next setting.

Light Status	●● ●
Increase	Pull the rudder stick to high end direction
Decrease	Pull the rudder stick to low end direction

Step 3: Adjust Low Servo Endpoint

Now, you are in Adjust Low Servo Endpoint. Like the High Servo Endpoint setting. Using your Rudder stick adjust the servo position for maximum tail pitch without binding

Light Status	●●● ●
Increase	Pull the rudder stick to low end direction
Decrease	Pull the rudder stick to high end direction

Now you complete all the setting, you need exit setting mode. By toggling the gain switch to Rate and AVCS three or more times quickly. Your gyro return the working mode. if you toggling the gain switch one time, you will return to Gyro Direction Reversion setting.
Note 1 At any process in setting mode, you can exit the setting mode by toggling the gain switch three or more times quickly.
Note 2 At working mode, when you need recalibrate the gyro anytime, you should toggling the gain switch three or more times quickly.