CopterX GY240 Digital Gyro user manual

Thank you for purchasing CopterX GY240 Gyro!
High performance, light weight gyro with AVCS (Angular Vector Control System aka Head Lock/ Heading Hold) for micro electric helicopter to large scale 90 size nitro helicopter. Please refer to the following for the simple setup and installation to get the best performance.

CopterX GY240 specification:

Dimensions: 28 x 28 x 20mm
Operating voltage: 4.8 to 6 volt
Power consumption: 80mA
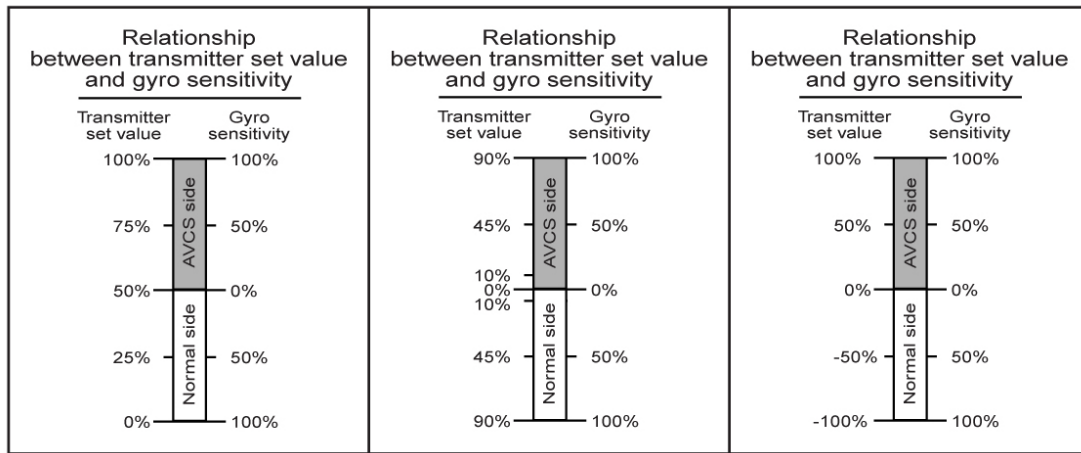Operating temperature: -10° C to 45° C

Installation:

Use double sided foam pad supplied with Gyro to install the CopterX gyro to helicopter. The bottom of the gyro must perpendicular to the direction of the main rotor shaft axis. Connect the gyro to receiver and rudder servo according to the diagram below. Before turn on your gyro for the first time please make sure the Gyro's DS switch was switch to on for digital servo or off for analog servo. Selecting the wrong type of servo may cause damage to your gyro and servo.
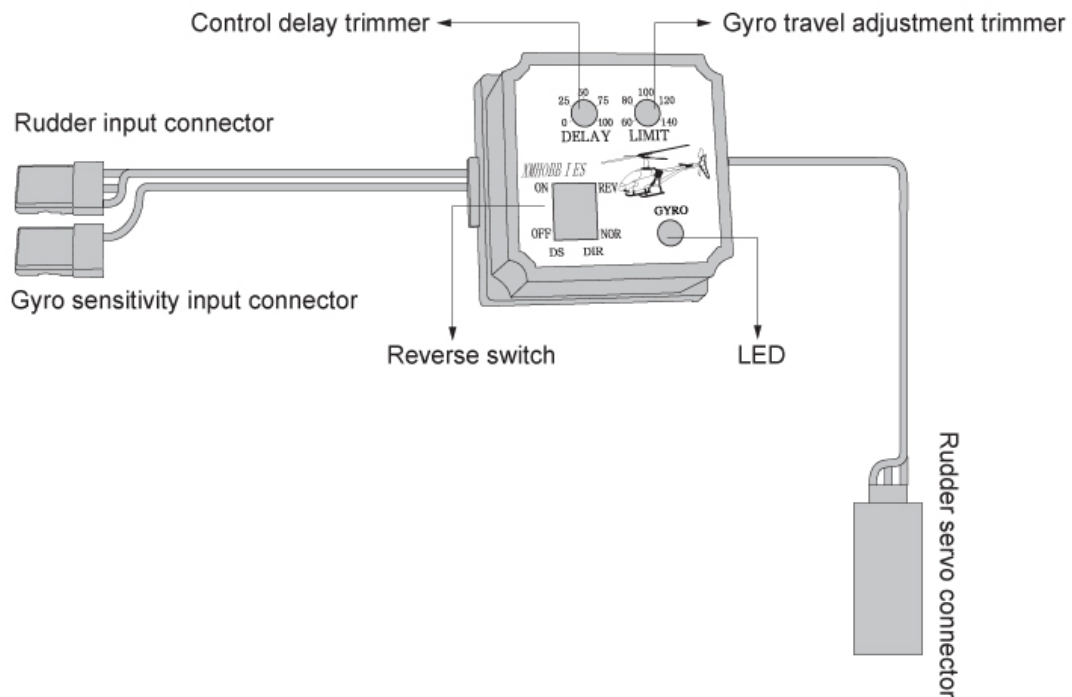
Setup:

Set transmitter gyro sensitivity channel to normal mode or AVCS (head lock) mode according to the diagram below. Depend on the transmitter you have the adjustment may be slightly different. Please refer to your transmitter manual. Turning on helicopter the indication light will start to flash slowly indicate the gyro is not receiving any signal from the receiver. Turn on transmitter and the indicator will flash rapidly indicate the gyro is initializing the data on power up. It will flash for 2-3 second then turn to solid red if AVCS mode was selected or turn off if normal mode was selected.

	Relationship between transmitter set value and gyro sensitivity			Relationship between transmitter set value and gyro sensitivity			Relationship between transmitter set value and gyro sensitivity	

DS (digital servo) switch:
Switch to "on" for digital servo or "off" for analog servo. Selecting the wrong type of servo may cause damage to your servo and Gyro.

DIR switch:
Check the operation direction of the gyro by moving the tail to one side. If the servo is moving in the wrong direction adjust the DIR switch according. Please make sure the Gyro is operating in correct direction. Gyro operating in wrong direction may result in dangerous situation and damage to helicopter or personal injury may occur.

Delay:
For fast digital servo set delay to zero. For slower or analog servo set delay to stop tail hunting.

Limit:
Use this adjustment to set the maximum travel of the rudder servo. Move the rudder stick to left and right and adjust the limit trimmer so that the servo will not blind from full left to full right. This is the travel limit for the servo and it will not operate beyond this limit to protect the linkage and servo.

LED display:
The LED display indicate the operation state of the servo. Please refer to the table below.

LED display	Gyro operation state
Rapid flash	Indicate that data is being initialized on power up.
Steady flash	Indicate that the gyro is operating in the AVCS head lock mode.
OFF	Indicate that the power is OFF, or the gyro is operating in the normal mode.
Slow flash	Indicate that gyro has not received any signal of rudder operation from the transmitter, the rudder servo cannot operate at this time..
Intermittent flash	Indicate that open power in the normal mode, but gyro can't initialize the data correctly at that time. Please switch the gyro sensitivity switch to the AVCS mode, and close the power of transmitter, then open it again. When in AVCS mode, rudder control signal currently received is different from neutral signal in gyro.
Double flash	It happens in the following circumstances: The rudder stick is operating. The neutral position of tail rudder is moving, and you have to readjust and set it.

Trouble shooting:

Tail hunting:
The sensitivity is set too high. Low the sensitivity or increase Delay.

Tail drafting:
The sensitivity is set too low. Increase the sensitivity or decrease Delay.

During AVCS mode the natural position of the rudder servo is initialized during startup. Never adjust the rudder trim during flight or natural position may be lost. If necessary switch to normal mode, adjust natural position and switch back to AVCS mode after adjustment been made.