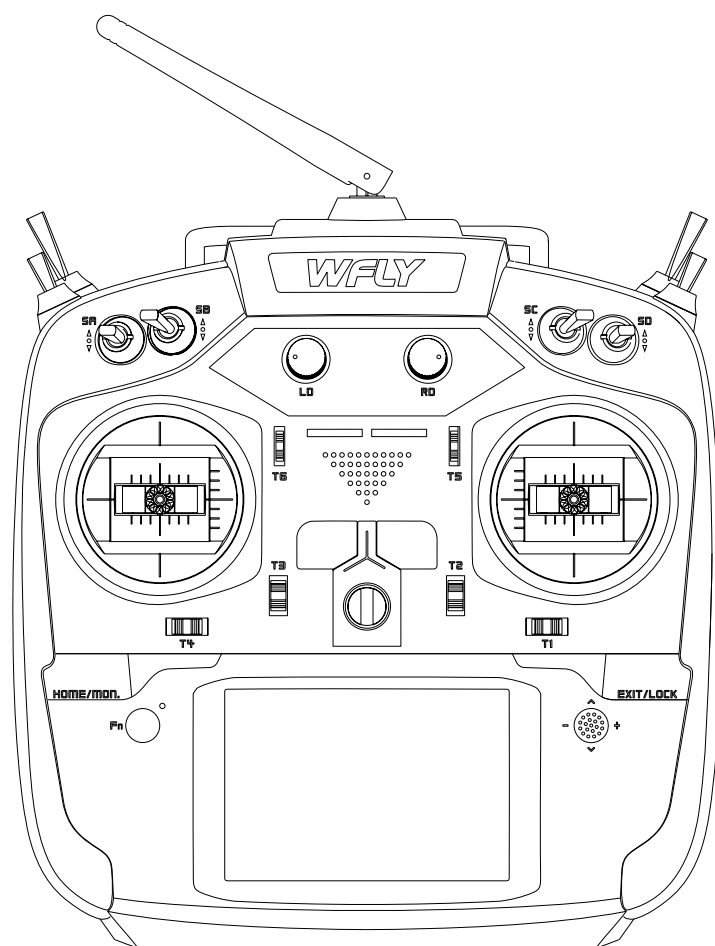




Shenzhen WFLY Technology Development Co., LTD



ET12 INSTRUCTION MANUAL

(ET Series)12-channel Digital Proportional R/C System

V1.02

Thank you for using WFLY products!

- Please read this product manual carefully before using this product!
- Please use this product correctly!

The model is not a toy, for safety, please don't fly in crowded places!

——Shenzhen WFLY Technology Development Co., LTD



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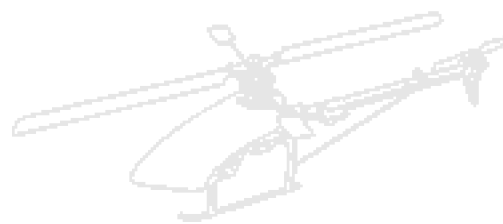
\General Menu

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- 087 Idle Down
- 088 Aileron→Rudder
- 089 Rudder→Aileron
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- 092 Flap Setting
- 093 Camber Mix
- 094 EIE to Camber
- 095 Camber Flap to Elevator
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- 097 Airbrake
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- 099 Motor
- 100 Fuel Mix
- 101 Elevator
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- 109 Idle Down
- 110 Aileron→Rudder
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- 113 Camber Mix
- 114 Elevator to Camber
- 115 Flap to ELE
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Safety Precautions

Symbols Definition

Pay special attention to the safety information of the following symbols.

DANGER

If without a proper operation, it may cause dangerous accident or seriously injury or may even cause death.

WARNING

If without a proper operation, it may cause dangerous accident or seriously injury or may even cause death, and it may cause slight hurt or probability cause bodily injury!

NOTICE

If without a proper operation, it may cause less possibility to serious hurt, but it may cause hurt or bodily injury.



Prohibitions



Mandatory

Flying Precautions

Disclaimer & Warning

User should be responsible for any consequences caused by using the product. WFLY shall not be liable for any directly or indirectly damage, injury and any legal liability. User shall comply with all guidelines including but not limited to this document.

Please follow the local laws and regulations for regular flight activities. Do not use this product to carry out personal safety, property safety or other bad flight behaviors.

Before flying, inspect the aircraft carefully, inspect whether the aircraft and transceiver system it's normal. When flying, make the transmitter display to the initial interface, in case of mistaken parameter change. After flight, turn off the receiver power before turn off the transmitter power, in case of any injury caused by fail safe works.

More debugging, more testing, less loss, less damage!

WARNING

To ensure the safety of yourself and others, please observe the following precautions:

Charge the batteries! Check transmitter and receiver battery levels and always recharge the batteries before each flying session. A low battery will soon die potentially, causing loss of control and a crash. When you begin your flying session, reset your ET12 built-in timer, and during the session pay attention to the duration of usage.

Be careful when flying near electric wires, high-rise buildings or communication facilities, as there may be radio interference around.

DANGER



Mandatory

Beginners should pay particular attention to the following safety precautions! Please read carefully! No fly when user is in poor health condition such as fatigue and drunkenness.

No fly in bad weather day such as rain, strong wind or at night, etc.

No fly near high voltage wires, communication base stations, government secret zone or public places where crowds gathered.

No fly in airports and other places where fly is forbidden.

NOTICE



Mandatory

Power on and off sequence of transmitter and receiver

Power on:

Firstly turn on the transmitter (ensuring the minimum throttle position), Secondly Turn on the receiver

Power off:

Firstly turn off the receiver, Secondly turn off the transmitter

Transmitter and receiver low voltage may cause fail-safe danger!

Note: The transmitter will display the warning interface, please pay attention to the transmitter prompt! Improperly operation may cause accident injury to user.



Battery

Lithium polymer battery(Short for LiFe battery),please use the WFLY special charger only.It is important to understand the operating characteristics of Li-FE batteries.

DANGER

IMPORTANT!

Long term storage (more than 3 months),storage temperature $\leq 45^{\circ}\text{C}$ general storage voltage 3.7-3.9v.Failure to follow the proceeding precautions can quickly result in severe, permanent damage to the batteries and possibly result in a fire!

NOTICE

- 1.Do not attempt to disassemble LiFe packs or cells.
- 2.Do not allow LiFe cells to come in contact with moisture or water at any time.
- 3.Always provide adequate ventilation around LiFe batteries during charge, discharge, while in use, and during storage.
- 4.Do not leave a LiFe battery unattended at any time while being charged or discharged.
- 5.Do not attempt to charge LiFe batteries with a charger that is NOT designed for LiFe batteries, as permanent damage to the battery and charger could result.
- 6.Always charge LiFe batteries in a fireproof location. Do not charge or discharge LiFe batteries on carpet, a cluttered workbench, near paper, plastic, vinyl, leather or wood, or inside an R/C model or full-sized automobile! Monitor the charge area with a smoke or fire alarm.
- 7.Do not charge LiFe batteries at currents greater than the "1C" rating of the battery ("C" equals the rated capacity of the battery).
- 8.Do not allow LiFe cells to overheat at any time! Cells which reach greater than 140 degrees Fahrenheit (60°C) should be placed in a fireproof location.
- 9.LiFe cells will not charge fully when too cold or show full charge.
- 10.It is normal for the batteries to become warm during charging, but if the charger or battery becomes excessively hot disconnect the battery from the charger immediately!! Always inspect a battery which has previously overheated for potential damage, and do not re-use if you suspect it has been damaged in any way.
- 11.Do not use a LiFe battery if you suspect physical damage has occurred to the pack. Carefully inspect the battery for even the smallest of dents, cracks, splits, punctures or damage to the wiring and connectors.DO NOT allow the battery's internal electrolyte to get into eyes or on skin—wash affected areas immediately if they come in contact with the electrolyte. If in doubt, place the battery in a fire-proof location for at least 30 minutes.
- 12.Do not store batteries near an open flame or heater.

13.Do not discharge LiFe batteries at currents which exceed the discharge current rating of the battery.

14.Always store LiFe cells/packs in a secure location away from children.

NOTICE

Transmitter (ET12):

ET12 adopts the power supply mode of lithium battery, and the working voltage adapts to the range of 3.5V-13V. Using a power supply that exceeds the operating voltage stroke may burn the machine!

The USB interface of the ET12 cannot be charged. Please charge the battery with a professional charger!

Receiver (RF209S):

The receiver's operating voltage adapts to the range 3.5V-13V, with anti-reverse protection slot (power input pole, positive and negative reverse protection). With a power supply that exceeds the operating voltage stroke, the receiver will burn out.



Headphone Port

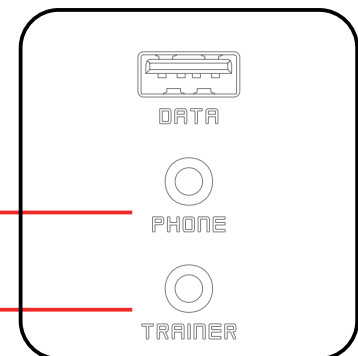
! Mandatory

Transmitter headphone port:

Only for voice output! Standard: 3.5mm audio port. Warning: This port is only used as a voice port. Do not insert the charging (high voltage) terminal into the port to avoid damage to the transmitter.

Headphone port

Trainer port



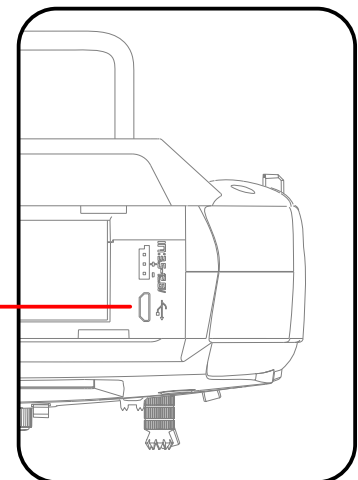
Trainer Port

! Mandatory

Transmitter trainer port:

The trainer port is with 3.5mm audio port output mode. This suite is without the trainer data line. If you want to use the trainer function, you need to purchase the trainer data line separately! Warning: This port is only used for trainer data transmission. It is forbidden to insert the power supply (high voltage) terminal to the port to avoid damage for the transmitter. Suggestion: You can consult the purchase line at WFLY Technology Taobao Store or other model online stores or physical stores.

USB port



USB Port

! Mandatory

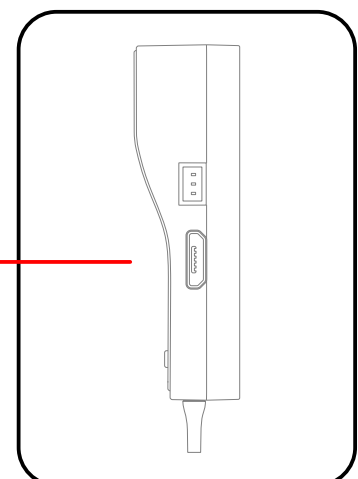
Transmitter USB port:

ET12 adopt standard USB port for upgrading function! Warning: This port is only used as upgrading data transmission, it is forbidden to insert the power supply (high voltage) terminal to the USB port to avoid damage for the transmitter.

Receiver USB port:

RF209S USB port is only used as upgrading data port, it is forbidden to insert the power supply (high voltage) terminal to the USB port to avoid damage for the receiver.

USB port



Product Features

Transmitter

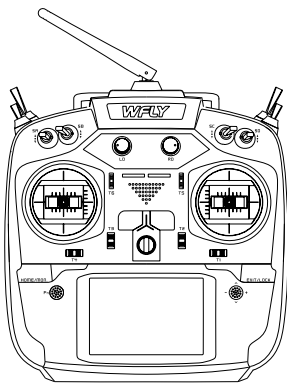
Type: ET12
Channel: 12
Voltage: 3.5V-13V(1S-3SLithium battery)
Current: 260-400mA
Application: Helicopter, Airplane, Multi-rotors, Vehicle, Ship.
Resolution: Full Channel 4096
Band: 2.4GHz (Bidirectional)
Storage: 30 models
Programming: 5 Groups Mixed Control
Language: Chinese, English
Upgrading: USB online upgrade
Display: 3.5inch touch, 480*320, color display
Voice: Support voice broadcast
Relay light: Available
180/270° Servo: Available
Wireless signal copy: model data

Receiver

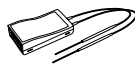
Type: RF209S
Band: 2.4GHz
Voltage: 3.5V-13V
Current: 95mA
Application: Helicopter, Airplane, multicopter, Vehicle, Ship, Robot.
Resolution: 4096
PWM: 9channels
W.BUS: Compatible
W.BUS2: Remote sensor input
Two-way transmission: Available
Lost-control protection: Available
Online upgrading: Available
Relay flight: Available
180/270° servo: Available
Receiver port setting: Available
External voltage detection: DC 0~96V
Dimension: 47x14x25mm
Weight: 12g

Basic Configuration

ET12 transmitter x1
RF209S receiver x1(include external power detection line x1)
Hanging strap x1
Summary manual x1



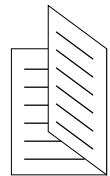
① Transmitter



② Receiver

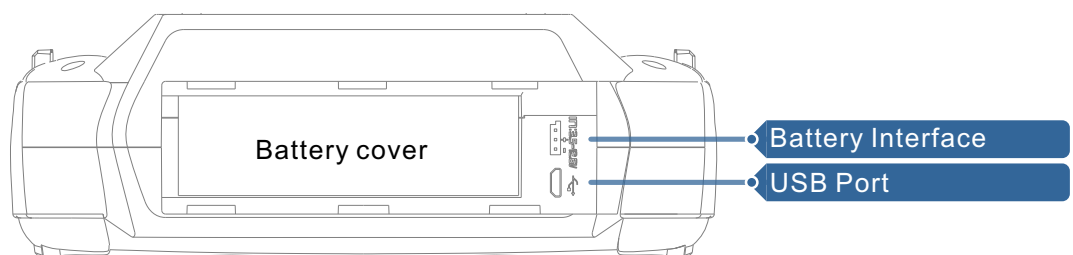
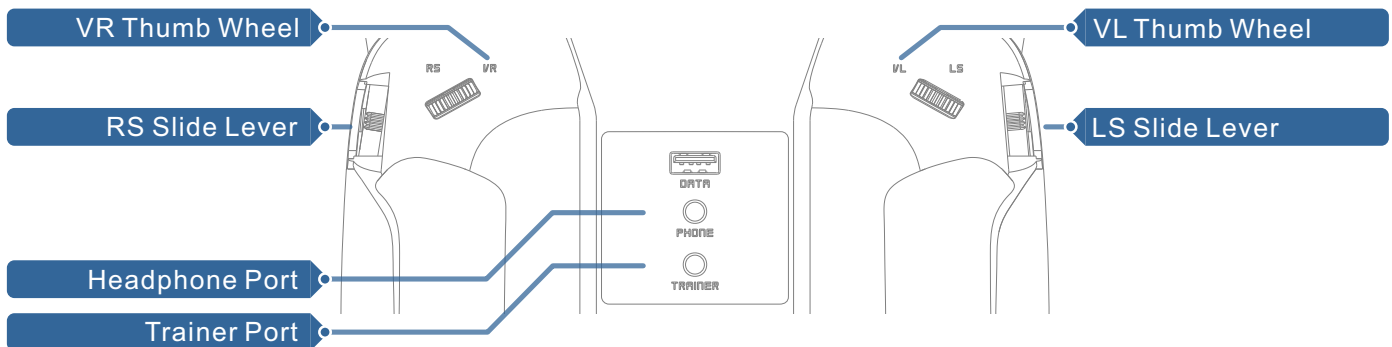
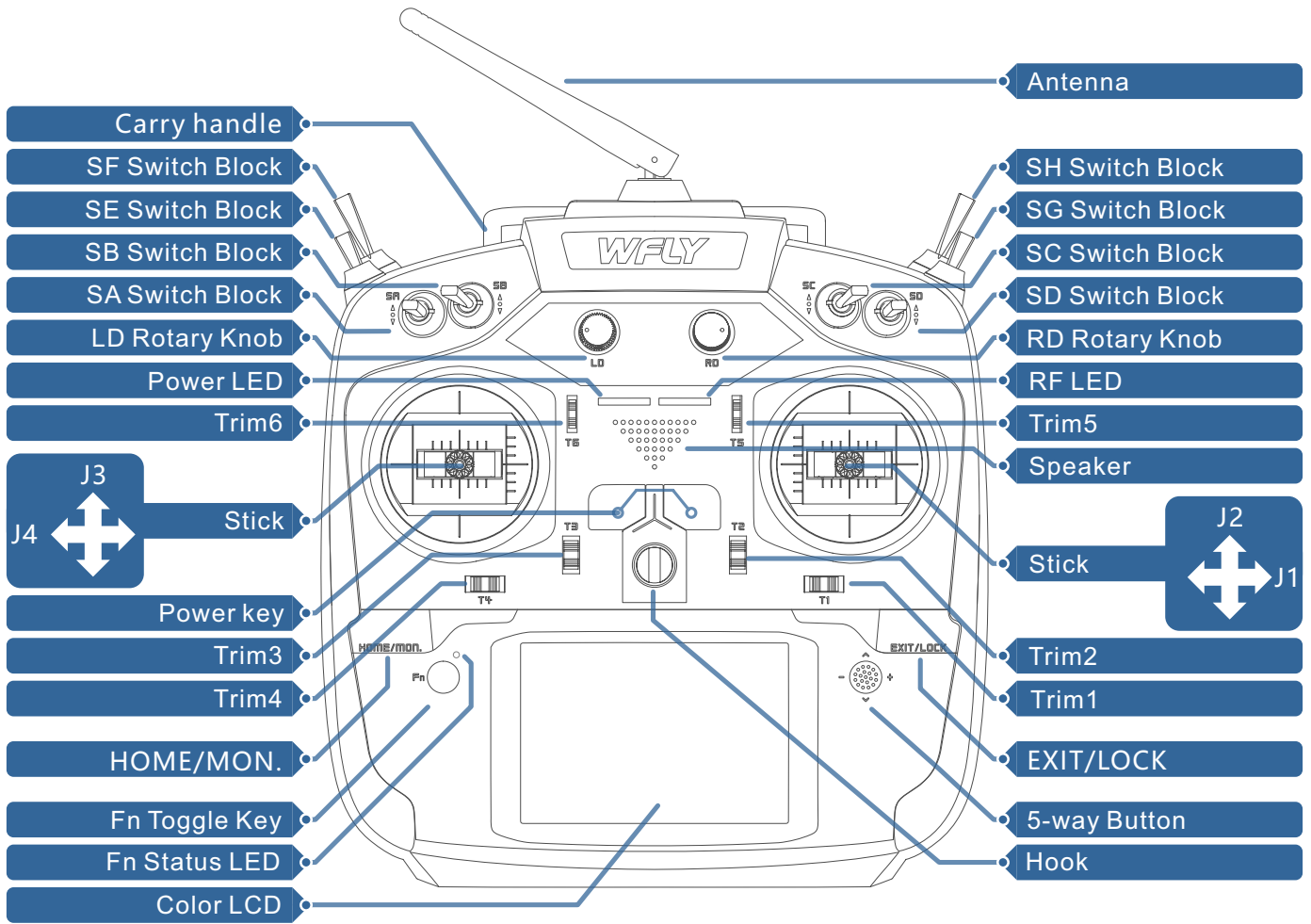


③ Hanging Strap



④ Summary Manual

Each Parts Name Of Transmitter



Switch configuration and model types

Power LED: Left, power indicator light, red

RF LED: Right, RF indicator light, blue.

POWER: Click one power key only for 3 seconds to open/shut down; Click 2 power keys at the same time to flash shutdown.

SA: Short lever 3 positions (user-defined)

SB: Long lever 3 positions (user-defined)

SC: Long lever 3 positions (user-defined)

SD: Short lever 3 positions (user-defined)

SE: Short lever 3 positions (user-defined)

SF: Short lever 3 positions (user-defined)

SG: Short lever 3 positions (user-defined)

SH: Long lever momentary (user-defined)

LS/RS: Slide lever (user-defined)

VL/VR: Thumb wheel (user-defined)

T1-T6: Trim (user-defined)

5-way button: Move the cursor button up and down or left and right, middle button for confirmation(Long press for momentary)

Fn switch key: Click to switch for 5-way button working mode. Fn status LED lighting-off, 5-way button works for interface operation setting and parameters input when touch screen is out of work(PS: 5-way button and touch panel could be used at the same time). Fn status LED is on, 5-way button works as control switch, click button or trimming.

PHONE: Earphone plug in the earphone transmitter speaker, meanwhile earphone output the voice.

TRAINER: Trainer port.

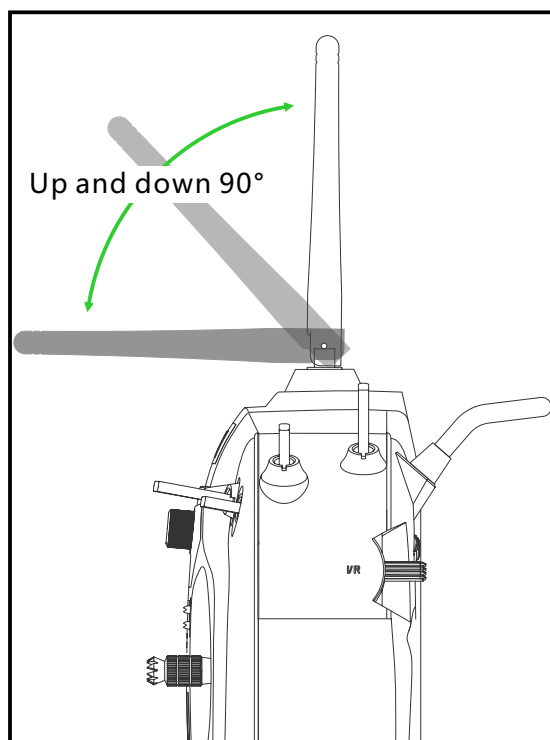
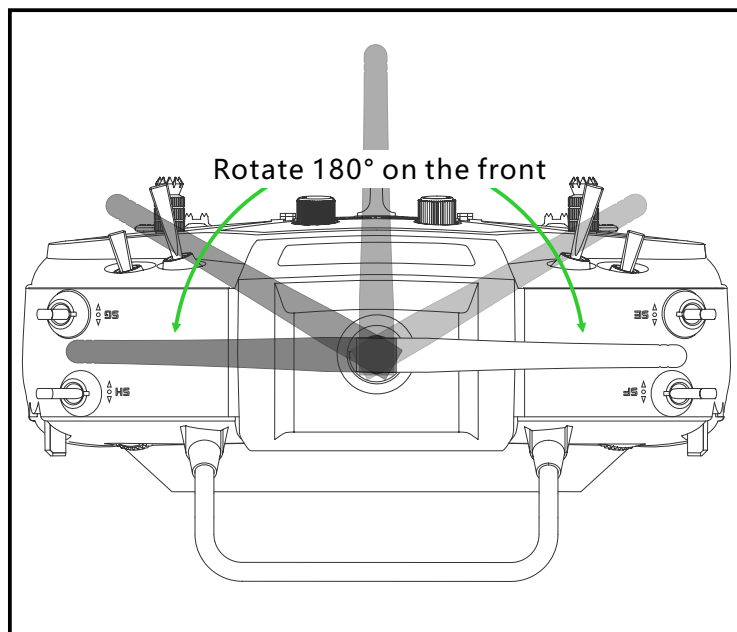
HOME/MON.: Home/Monitor key, short click home, long click monitor.

EXIT/LOCK: Exit/Lock key, short click to exist, long click to lock the screen.

The Travel Of Antenna Direction Adjustment

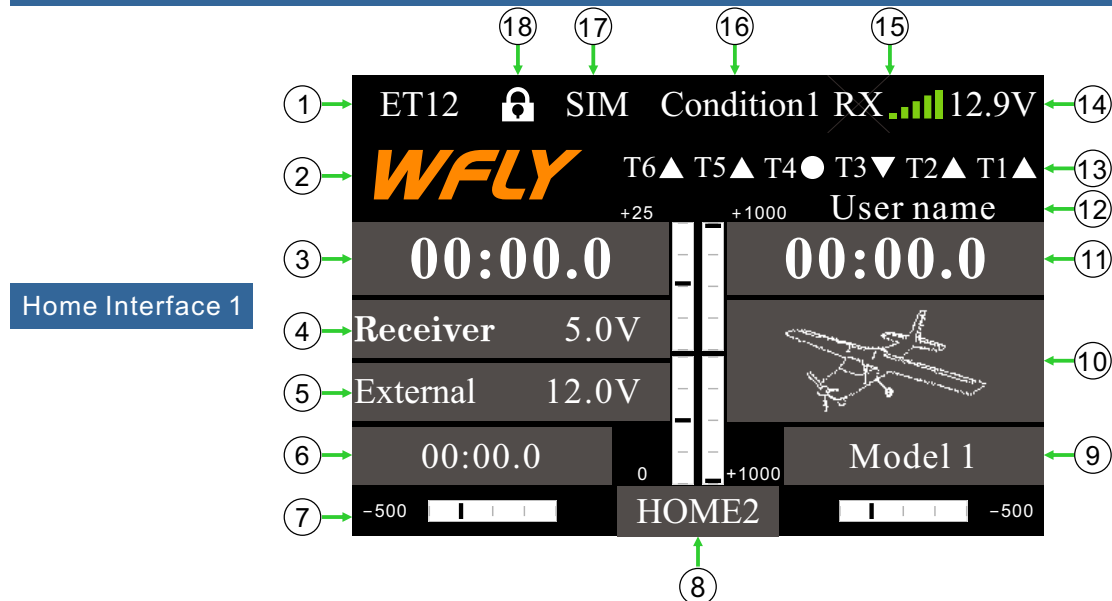
The antenna activity of the transmitter is limited by the stroke. If the activity is exceeded, the antenna will be damaged. The active travel indication of the antenna is as following:

! Mandatory



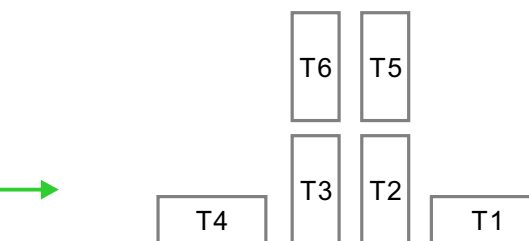
Basic Operation

Home Interface Introduction



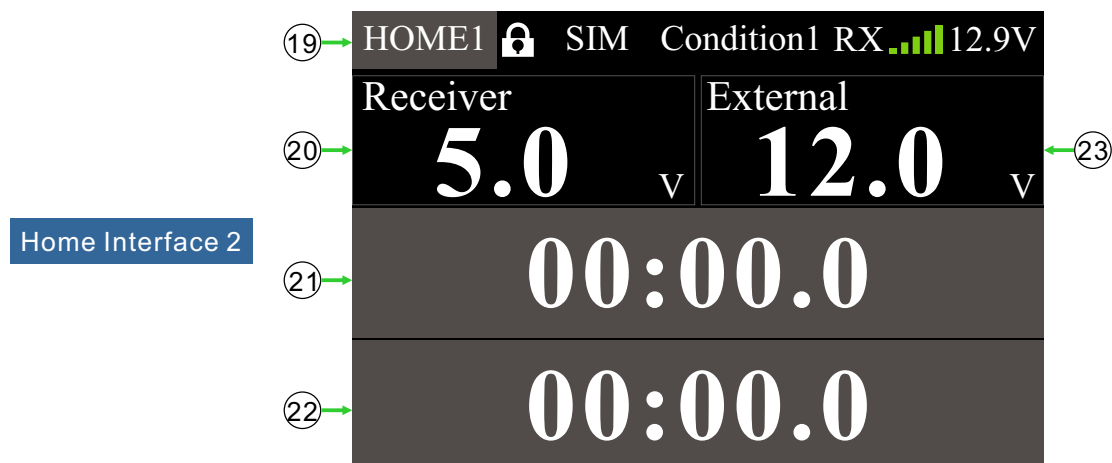
Introduction and Operation

1. Transmitter model
2. LOGO, Click to enter main menu
3. Timer 1
4. Return data(receiver voltage)
5. Return data(External battery)
6. Model active time,switch model,long press, reset shutdown.
7. Trim monitor,display active trimming status(Right side diagram)
8. "HPME2" key,click to enter home Interface 2
9. Model name: Click to enter models select interface
10. Model Type:Click to enter current model type Interface
11. Timer 2
12. User name,click into user defined name
13. Indicate trim status,display the current trim position
14. Transmitter battery voltage
15. Receiver signal strength
16. Flight condition,current flight mode
17. Trainer mode(Trainer/Simulator/Student)
18. Lock(Click and hold EXIT/LOCK button for 2s



to enter lock status)

19. "HOME1 interface1",click into home interface
20. Return data(Receiver voltage)
21. Timer 1
22. Timer 2
23. Return data(Ext battery voltage)



Touch Screen Operation

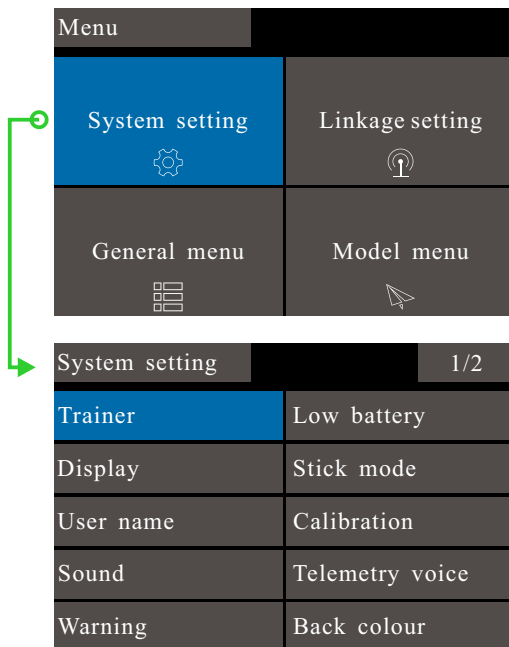
ET12 uses 3.5 inches resistive touch screen, which makes ET12 operation more flexible and efficient.

! Mandatory

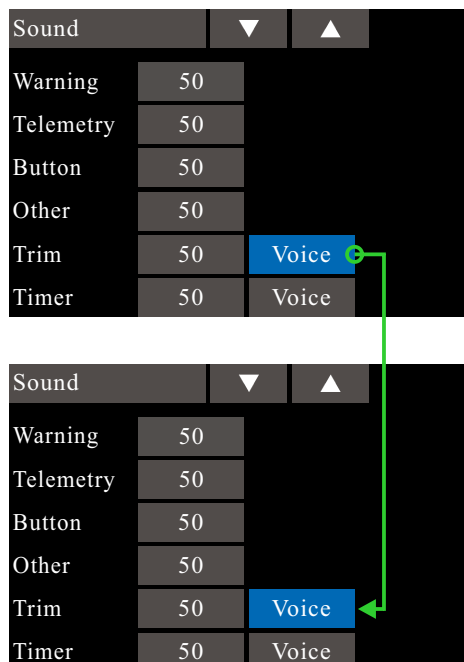
Touch softly the Touch Screen with the stylus pen or your fingertips. Plastic film is attached to the touch screen. Please be careful so that you don't scratch the touch screen with anything hard such as a metal object. Don't push the touch screen with excessive force or drop anything on the panel.

Operate Demonstration

Menu Operation: Click enter into the relative interface

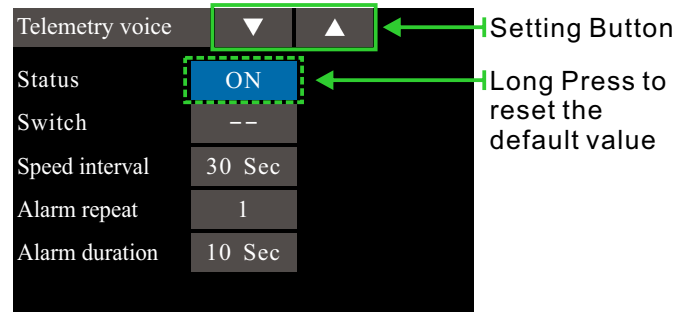


Status Switch: Click into switch status

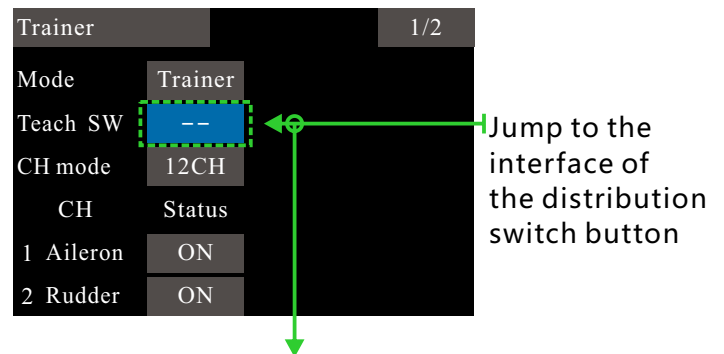


Parameters Setting

1 Data setting: Click and pop up the upper right setup key, press long for rapid add and subtract. Long Press the number button to reset the default value.



2 Switch Selection: Click switches selecting button, choose the required switch from the switches selecting interface

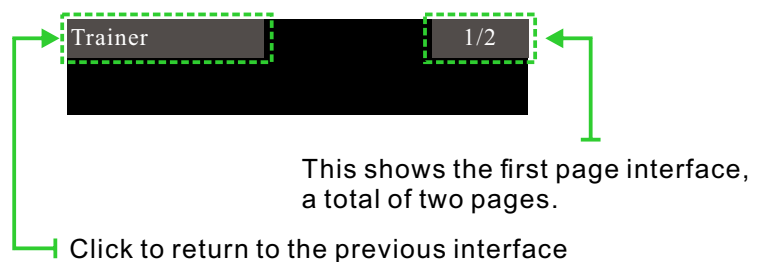


Trainer				
J1	SA	SE	T1	C L/R
J2	SB	SF	T2	C U/D
J3	SC	SG	T3	
J4	SD	SH	T4	--
LD	LS	VL	T5	
RD	RS	VR	T6	Diagram

Return, Paging Operation

Return: Click button to switch interface

Paging: Click paging button to switch interface, when multiple page, the upper right of interface indicates A/B style (A, current page; B page numbers)



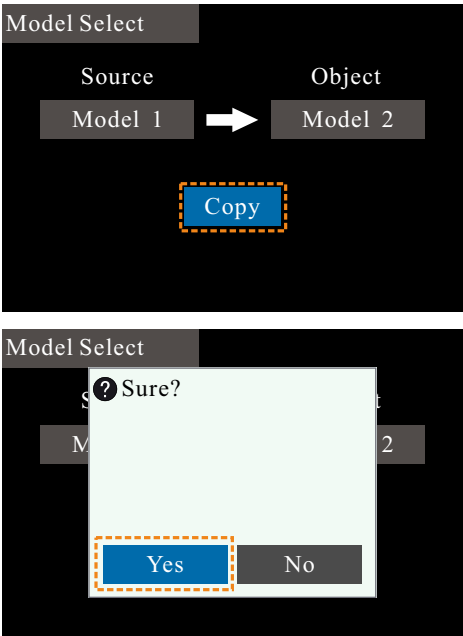
Touch Screen Operation

Popup prompt:

When the operation changes important parameters, the selection box will pop up for secondary confirmation. The default "No" is selected.

Example: Model selection, interface replication model operation!

After clicking the "Copy" button, the prompt selection box pops up, select "Yes", then complete the operation of copying the parameter of "Model 1" to "Model 2".



Warning popup

Starting up machine model function warning: Turn the corresponding function switch to the off position and enter into the system after the warning disappeared.

Starting up machine low voltage alarm: select "Yes" to continue the power on; select "No" to shut down.

Receiver not connected alarm: Select "Back" to close the alarm interface. (Some functions need to enable the "Telemetry" function to be used normally. After "Telemetry" is turned on and connected normally, the warning will not be displayed.)

Stick calibration warning: Select "Back" to close the alarm interface. (The receiver needs to be disconnected during calibration!)

Shutdown alarm: Select "Back" to close the warning interface and shutdown alarm.

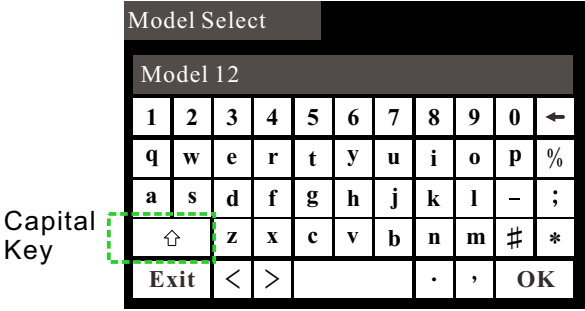
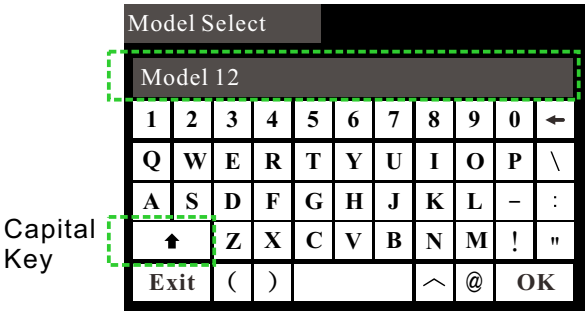
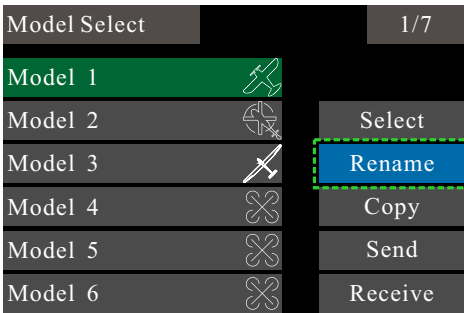
Keyboard

The keyboard is only used for naming function, such as model renaming,

Flight condition naming, username setting.

The input keyboard is case sensitive and has multiple symbols to choose from.

The input content above the interface could be checked when naming.





Indicator Light of Transmitter

Power LED Red
RF LED Blue

	LED	Status
Power LED	Light on	Power on
	Light off	Power off
	Light flash	Power on alarm(Low voltage,power on/off warning)
RF LED	Light off	Power Off/Student/Simulator/Mode
	Light on	Normal communication,Trainer or normal mode
	Light flash	Linking status

Stick Adjustment

Stick head height adjustment:

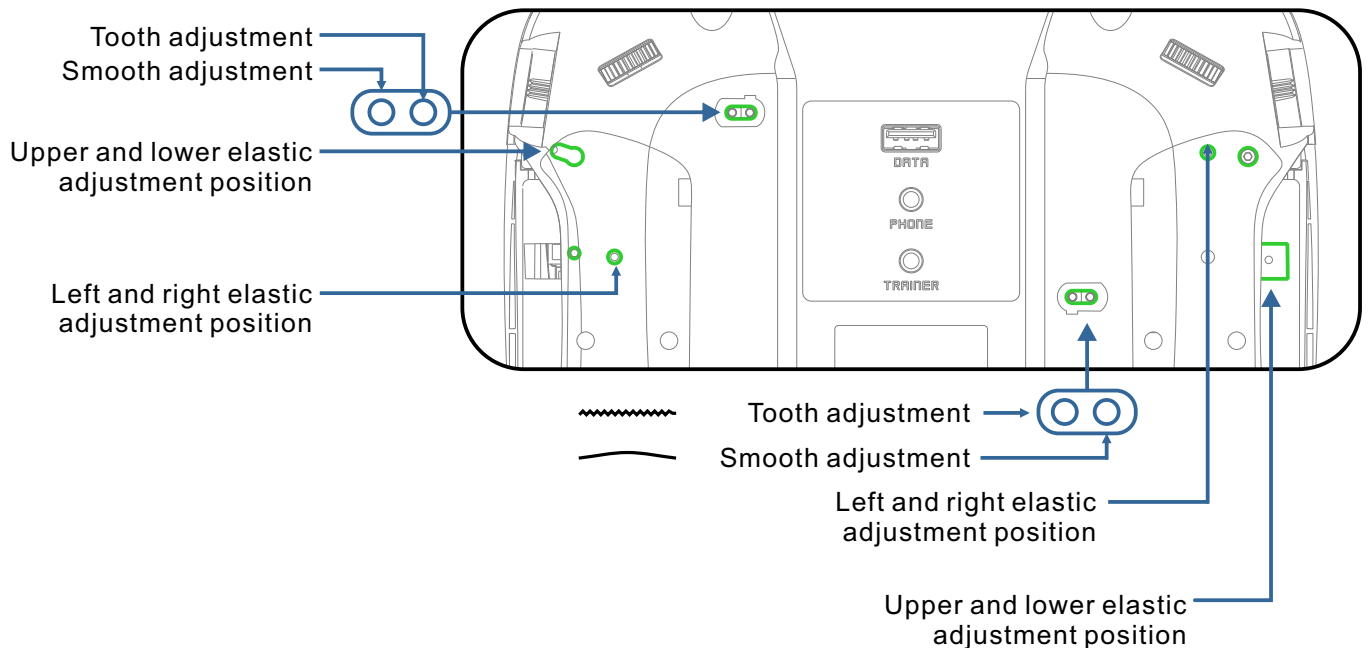
1. Loosen the upper section head counterclockwise
2. Then twist the lower head to adjust the height
3. Twist the upper head clockwise to lock it

Stick feel and function adjustment

ET12 uses the newly developed four-bearing assembly to trim the feel!

Uncover the silicone sheet on the back and adjust the feel directly.

Note: Do not use excessive force or over twist the number of turns when adjusting the screw. Otherwise, the structure assembly would be twisted off and the screw may fall off, resulting in irreversible damage.





Left and right stick mode replacement method

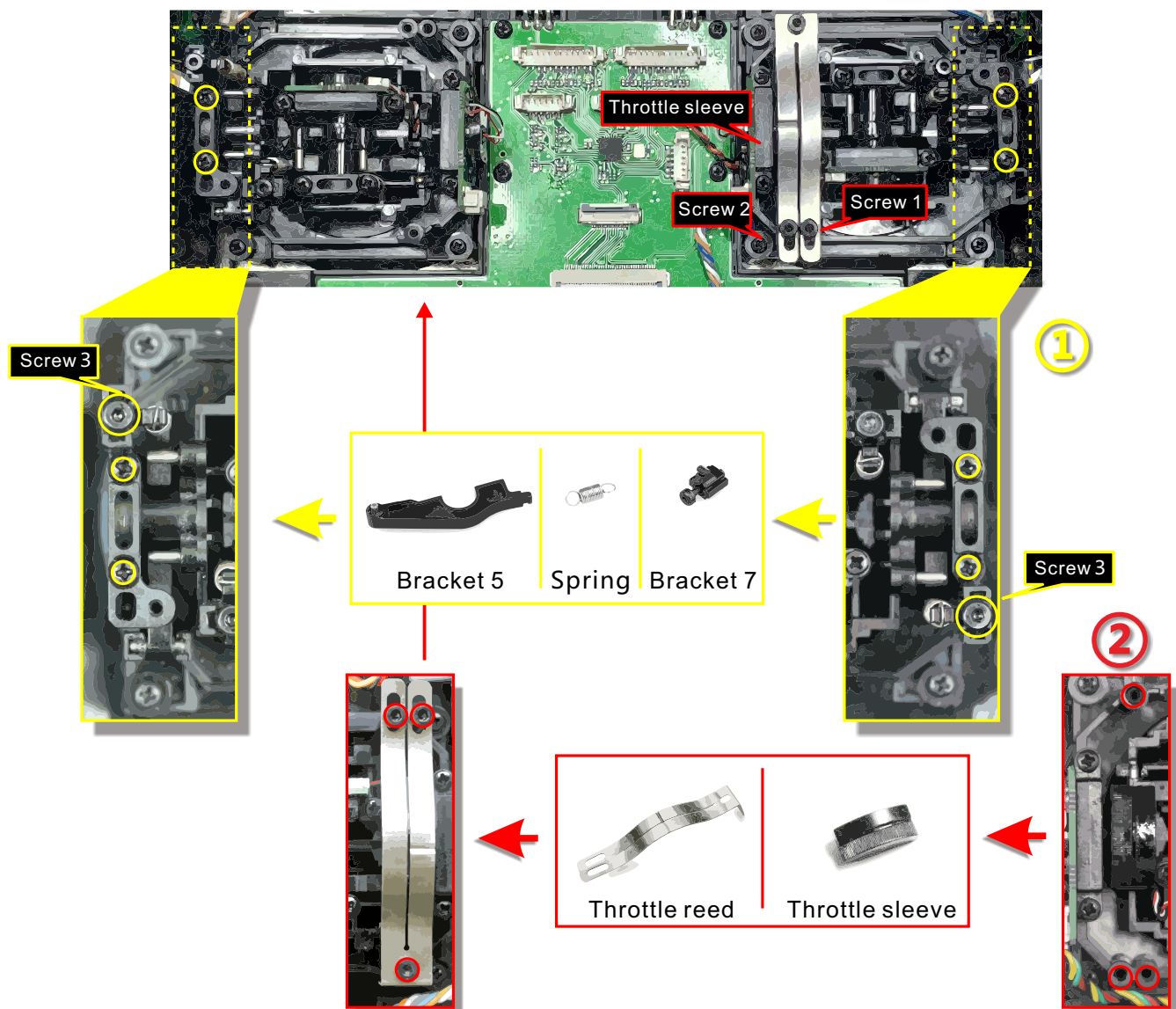
It is not recommended to replace the left and right sticks by yourself, otherwise the transmitter may be damaged.

Required tools: 3 mm cross screwdriver, 1.5 mm hex driver

First open the transmitter housing and then follow the instructions shown below:

1 Loosen the bearing housing screws (the screws do not need to be fully retracted), then remove the spring, bracket 7 and bracket 5 and tighten the screws; then remove the removed spring, bracket 7 and bracket 5 in another assembly corresponding position (remove the bearing housing screw before assembly), The tightness of the stick can be changed by adjusting the height of screw 3.

2 Remove the screw of the throttle reed, the throttle reed and the throttle sleeve, and install them in the corresponding position of the other assembly. According to your own habits, select the type of throttle sliding (toothed and smooth) and adjust the screw (screw 1 or The height of the screw 2) makes the damping of the throttle conform to your own habits.



After the throttle structure is modified, turn on the machine, enter system setting → stick mode, select the corresponding operation mode, and then adjust the stick after replacing the left and right modes! If you need components such as bracket 5 (such as the parts needed for assembling double circuit structure!), you can e-mail to WFLY overseas seller to order the spare parts at sales@wflysz.com



Basic Operation

Receiver Instructions

Receiver LED STATUS LIST

Mode	LED	Action	Status
Work	Purple	On	PWM normal work mode
	Green	On	W.BUS normal work mode
	Blue	On	PPM normal work mode
	Red	On	No signal
	Red	Slow flash	Low voltage
	Orange	Slow flash	Linking
SET	Green	Slow flash	W.BUS mode
	Blue	Slow flash	PPM mode
	Purple	Slow flash	PWM mode

Link: Charge the receiver then press and hold 'SET' button for 3 seconds, wait for the link instruction after the orange light slowly flashes.

PPM/W.BUS/PWM port modes select: Click and hold the "SET" to charge, then enter into model setting, slightly click the switcher mode, press and hold to confirm.

Receiver mode switching: The receiver works in "mode A" by default, and the receiver interface output data according to the sticker serial number. Switching the "mode" to the code will change the interface output mode. You can use multiple receivers to output more channels. More details, please check [Linkage Settings - Link]

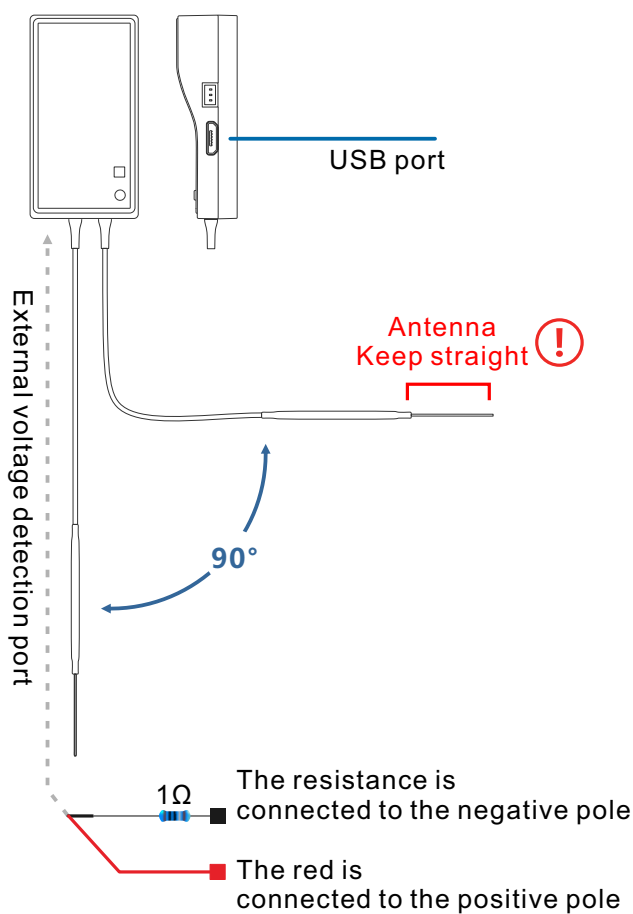
Receiver connection and installation

The working voltage of the receiver is 3.7-13V. Each port can be used as the power input terminal.

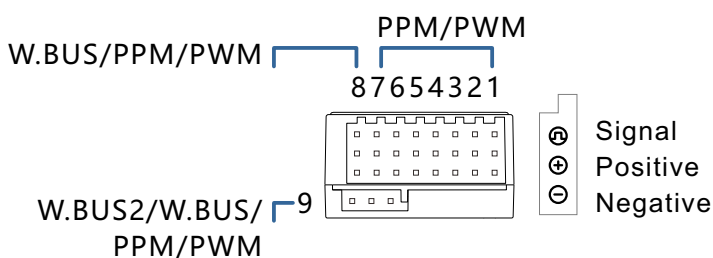
Notice: pay attention to the positive and negative polarity when connecting the power supply. Do not use the power supply that exceeds the working voltage of the receiver. Otherwise, the receiver will be damaged!

The RF209S is the newest series of high performance receiver with 9 PWM channels, 1 PPM/W.BUS channel (User defined), and 1 W.BUS2 channel (User defined).

In order to obtain optimal signal retrieval performance, the two antennas are preferably processed 90° to each other when installed, as shown in the right diagram.



External voltage detection port
Port polarity mark



! Mandatory

1. If there is a metal conductor around the receiver antenna, the signal performance would be affected. In this case, the antenna should be bypassed by the conductor, placed on both sides of the fuselage, and it is better to make the antenna leak outside the model casing! In this way, good signal reception can be maintained regardless of the flight attitude.

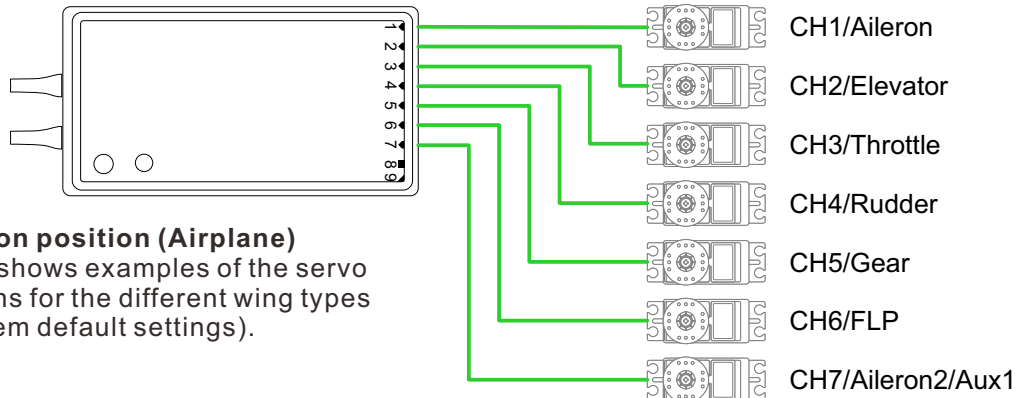
2. When the antenna is installed. The unshielded end of the antenna should be as far away as possible from the conductor materials such as metal and carbon fiber. The antenna cable avoids bending at large angles. And the end core should be as straight as possible.

3. If the model body is covered with a conductive material such as carbon fiber or metal, the antenna portion must be extended beyond the body. At the same time, do not stick too close to the conductive body after the antenna is extended. In addition, the antenna should also be kept away from the fuel tank.

The receiver has an external battery detection interface, which can be used to view voltage information such as ESC, battery, etc., and the transmitter can separately set alarm voltages for the receiver voltage and external voltage. Pay attention to the positive and negative polarity when using the detection wire!

Receiver and servo connection example - Airplane

The figure below shows an example of airplane connection. Please use the actual wing type and tail type for servo connection.



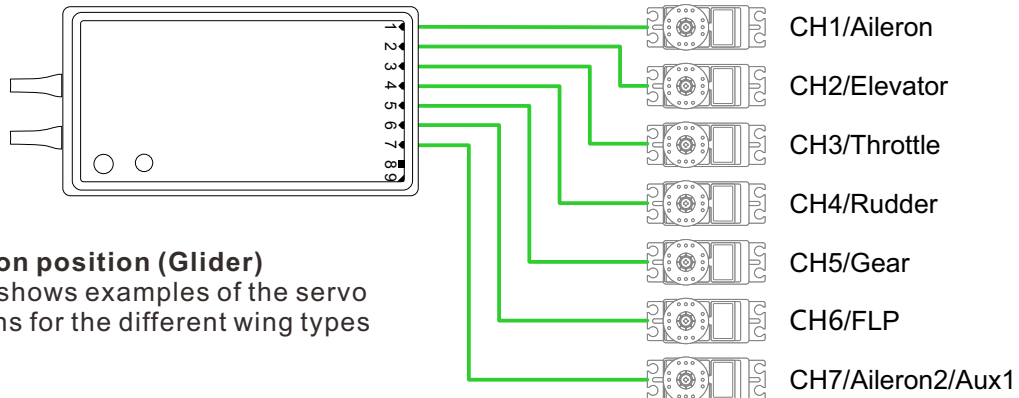
Servo connection position (Airplane)

The table below shows examples of the servo connection positions for the different wing types and tail types(system default settings).

Type	Wing	Flying wing	Tail		CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10	CH11	CH12
	1 AIL		Normal	Channel	AIL	ELE	THR	RUD	Gear	Aux6	Aux6	Aux5	Aux4	Aux3	Aux2	Aux1
				Control	J1	J3	J2	J4	SG							
				Trim	T1	T3	T2	T4								
	1 AIL		V-Tail	Channel	AIL	ELE	THR	RUD	Gear	Aux6	Aux6	Aux5	Aux4	Aux3	Aux2	Aux1
				Control	J1	J3	J2	J4	SG							
				Trim	T1	T3	T2	T4								
	1 AIL		Ailevator	Channel	AIL	ELE	THR	RUD	Gear	Aux6	ELE2	Aux5	Aux4	Aux3	Aux2	Aux1
				Control	J1	J3	J2	J4	SG							
				Trim	T1	T3	T2	T4								
	2 AIL		Normal	Channel	AIL	ELE	THR	RUD	Gear	AIL2	Aux6	Aux5	Camber mix	Aux3	Aux2	Aux1
				Control	J1	J3	J2	J4	SG				LS			
				Trim	T1	T3	T2	T4								
	2 AIL		V-Tail	Channel	AIL	ELE	THR	RUD	Gear	AIL2	Aux6	Aux5	Camber mix	Aux3	Aux2	Aux1
				Control	J1	J3	J2	J4	SG				LS			
				Trim	T1	T3	T2	T4								
	2 AIL		Ailevator	Channel	AIL	ELE	THR	RUD	Gear	AIL2	ELE2	Aux5	Camber mix	Aux3	Aux2	Aux1
				Control	J1	J3	J2	J4	SG				LS			
				Trim	T1	T3	T2	T4								
	2AIL+1FLP		Normal	Channel	AIL	ELE	THR	RUD	Gear	FLP	AIL2	Aux5	Camber mix	Aux3	Aux2	Aux1
				Control	J1	J3	J2	J4	SG	LD			LS			
				Trim	T1	T3	T2	T4								
	2AIL+1FLP		V-Tail	Channel	AIL	ELE	THR	RUD	Gear	FLP	AIL2	Aux5	Camber mix	Aux3	Aux2	Aux1
				Control	J1	J3	J2	J4	SG	LD			LS			
				Trim	T1	T3	T2	T4								
	2AIL+1FLP		Ailevator	Channel	AIL	ELE	THR	RUD	Gear	FLP	AIL2	ELE2	Camber mix	Aux3	Aux2	Aux1
				Control	J1	J3	J2	J4	SG	LD			LS			
				Trim	T1	T3	T2	T4								
	2AIL+2FLP		Normal	Channel	AIL	ELE	THR	RUD	Gear	AIL2	FLP	FLP2	Camber mix	Aux3	Aux2	Aux1
				Control	J1	J3	J2	J4	SG		LD		LS			
				Trim	T1	T3	T2	T4								
	2AIL+2FLP		V-Tail	Channel	AIL	ELE	THR	RUD	Gear	AIL2	FLP	FLP2	Camber mix	Aux3	Aux2	Aux1
				Control	J1	J3	J2	J4	SG		LD		LS			
				Trim	T1	T3	T2	T4								
	2AIL+2FLP		Ailevator	Channel	AIL	ELE	THR	RUD	ELE2	AIL2	FLP	FLP2	Camber mix	Gear	Aux2	Aux1
				Control	J1	J3	J2	J4			LD		LS	SG		
				Trim	T1	T3	T2	T4								
	2AIL		Normal	Channel	AIL	AIL2	THR	RUD	Gear	Aux6	Aux5	Aux4	ELE	Camber mix	Aux2	Aux1
				Control	J1		J2	J4	SG				J3	LS		
				Trim	T1		T2	T4					T3			
	2AIL		Winglet	Channel	AIL	AIL2	THR	RUD	Gear	RUD2	Aux6	Aux5	ELE	Camber mix	Aux2	Aux1
				Control	J1		J2	J4	SG				J3	LS		
				Trim	T1		T2	T4					T3			
	2AIL+1FLP		Normal	Channel	AIL	AIL2	THR	RUD	Gear	FLP	AIL6	Aux5	ELE	Camber mix	Aux2	Aux1
				Control	J1		J2	J4	SG	LD			J3	LS		
				Trim	T1		T2	T4					T3			
	2AIL+1FLP		Winglet	Channel	AIL	AIL2	THR	RUD	Gear	FLP	RUD2	Aux5	ELE	Camber mix	Aux2	Aux1
				Control	J1		J2	J4	SG	LD			J3	LS		
				Trim	T1		T2	T4					T3			
	2AIL+2FLP		Normal	Channel	AIL	AIL2	THR	RUD	Gear	FLP	Aux6	FLP2	ELE	Camber mix	Aux2	Aux1
				Control	J1		J2	J4	SG	LD			J3	LS		
				Trim	T1		T2	T4					T3			
	2AIL+2FLP		Winglet	Channel	AIL	AIL2	THR	RUD	Gear	FLP	RUD2	FLP2	ELE	Camber mix	Aux2	Aux1
				Control	J1		J2	J4	SG	LD			J3	LS		
				Trim	T1		T2	T4					T3			

Receiver and servo connection example - Glider

The figure below shows an example of glider connection. Please use the actual wing type and tail type for servo connection.



Servo connection position (Glider)

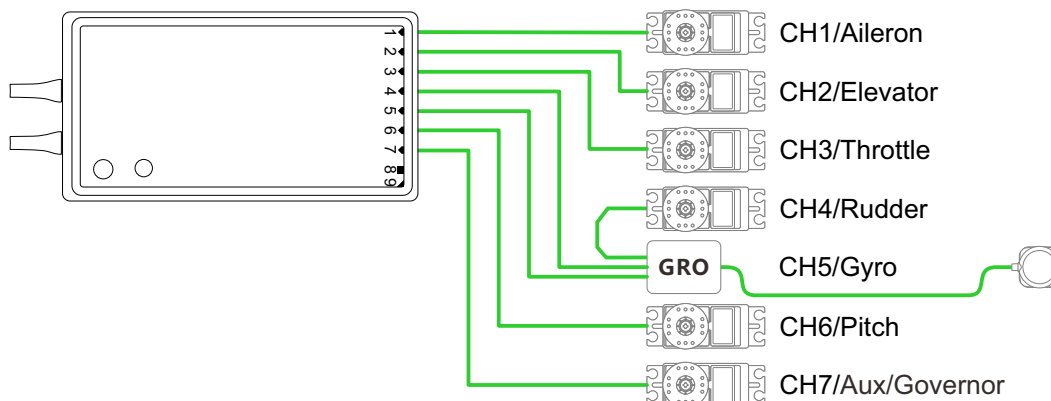
The table below shows examples of the servo connection positions for the different wing types and tail types.

Type	Wing	Flying wing	Tail		CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10	CH11	CH12
1 AIL			Normal	Channel	AIL	ELE	Motor	RUD	Aux6	Aux6	Aux6	Aux5	Aux4	Aux3	Aux2	Aux1
				Control	J1	J3	SG	J4								
				Trim	T1	T3		T4								
1 AIL			V-Tail	Channel	AIL	ELE	Motor	RUD	Aux6	Aux6	Aux6	Aux5	Aux4	Aux3	Aux2	Aux1
				Control	J1	J3	SG	J4								
				Trim	T1	T3		T4								
1 AIL			Ailevator	Channel	AIL	ELE	Motor	RUD	Aux6	Aux6	ELE2	Aux5	Aux4	Aux3	Aux2	Aux1
				Control	J1	J3	SG	J4								
				Trim	T1	T3		T4								
2AIL			Normal	Channel	AIL	ELE	Motor	RUD	Aux6	AIL2	Aux6	Aux5	Camber mix	Butterfly	Aux2	Aux1
				Control	J1	J3	SG	J4					LS	J2		
				Trim	T1	T3		T4								
2AIL			V-Tail	Channel	AIL	ELE	Motor	RUD	Aux6	AIL2	Aux6	Aux5	Camber mix	Butterfly	Aux2	Aux1
				Control	J1	J3	SG	J4					LS	J2		
				Trim	T1	T3		T4								
2AIL			Ailevator	Channel	AIL	ELE	Motor	RUD	Aux6	AIL2	ELE2	Aux5	Camber mix	Butterfly	Aux2	Aux1
				Control	J1	J3	SG	J4					LS	J2		
				Trim	T1	T3		T4								
2AIL+1FLP			Normal	Channel	AIL	ELE	Motor	RUD	Aux6	FLP	AIL2	Aux5	Camber mix	Butterfly	Aux2	Aux1
				Control	J1	J3	SG	J4					LS	J2		
				Trim	T1	T3		T4								
2AIL+1FLP			V-Tail	Channel	AIL	ELE	Motor	RUD	Aux6	FLP	AIL2	Aux5	Camber mix	Butterfly	Aux2	Aux1
				Control	J1	J3	SG	J4					LS	J2		
				Trim	T1	T3		T4								
2AIL+1FLP			Ailevator	Channel	AIL	ELE	Motor	RUD	Aux6	FLP	AIL2	ELE2	Camber mix	Butterfly	Aux2	Aux1
				Control	J1	J3	SG	J4					LS	J2		
				Trim	T1	T3		T4								
2AIL+2FLP			Normal	Channel	AIL	ELE	Motor	RUD	Aux6	AIL2	FLP	FLP2	Camber mix	Butterfly	Aux2	Aux1
				Control	J1	J3	SG	J4					LS	J2		
				Trim	T1	T3		T4								
2AIL+2FLP			V-Tail	Channel	AIL	ELE	Motor	RUD	Aux6	AIL2	FLP	FLP2	Camber mix	Butterfly	Aux2	Aux1
				Control	J1	J3	SG	J4					LS	J2		
				Trim	T1	T3		T4								
2AIL+2FLP			Ailevator	Channel	AIL	ELE	Motor	RUD	ELE2	AIL2	FLP	FLP2	Camber mix	Butterfly	Aux2	Aux1
				Control	J1	J3	SG	J4					LS	J2		
				Trim	T1	T3		T4								
	2AIL		Normal	Channel	AIL	AIL2	Motor	RUD	Aux5	Aux6	Aux4	Aux3	ELE	Camber mix	Aux2	Aux1
				Control	J1		SG	J4					J3	LS		
				Trim	T1			T4					T3			
	2AIL		Winglet	Channel	AIL	AIL2	Motor	RUD	Aux5	RUD2	Aux4	Aux3	ELE	Camber mix	Aux2	Aux1
				Control	J1		SG	J4					J3	LS		
				Trim	T1			T4					T3			
	2AIL+1FLP		Normal	Channel	AIL	AIL2	Motor	RUD	Aux5	FLP	Aux6	Aux3	ELE	Camber mix	Butterfly	Aux1
				Control	J1		SG	J4					J3	LS	J2	
				Trim	T1			T4					T3			
	2AIL+1FLP		Winglet	Channel	AIL	AIL2	Motor	RUD	Aux5	FLP	RUD2	Aux3	ELE	Camber mix	Butterfly	Aux1
				Control	J1		SG	J4					J3	LS	J2	
				Trim	T1			T4					T3			
	2AIL+2FLP		Normal	Channel	AIL	AIL2	Motor	RUD	Aux5	FLP	Aux6	FLP2	ELE	Camber mix	Butterfly	Aux1
				Control	J1		SG	J4					J3	LS	J2	
				Trim	T1			T4					T3			
	2AIL+2FLP		Winglet	Channel	AIL	AIL2	Motor	RUD	Aux5	FLP	RUD2	FLP2	ELE	Camber mix	Butterfly	Aux1
				Control	J1		SG	J4					J3	LS	J2	
				Trim	T1			T4					T3			

Basic Operation

Receiver and servo connection example - Helicopter

The figure below shows an example of helicopter connection. Please use the actual wing type and tail type for servo connection.

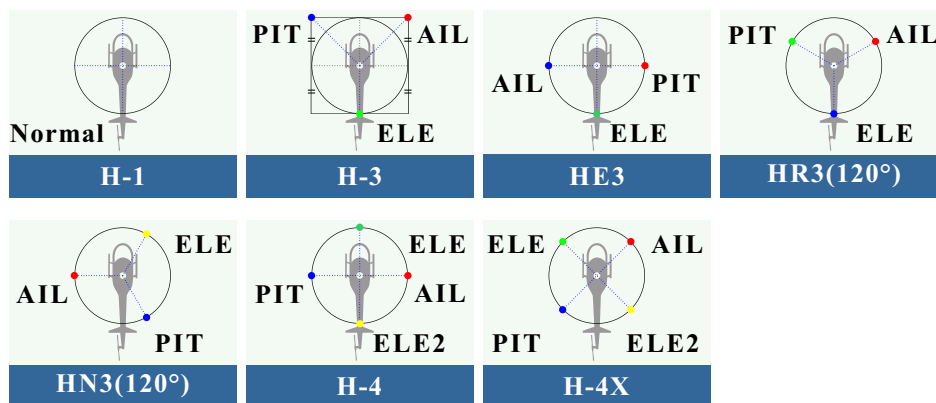


Servo connection position (Helicopter)

The table below shows examples of the servo connection positions for different swashes.

Type	Swash		CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10	CH11	CH12
H e l i c o p t e r	H-1	Channel	AIL	ELE	THR	RUD	Gyro	PIT	Governor	Needle	Gyro2	Gyro3	Aux2	Aux1
		Control	J1	J3	J2	J4		J2		LS				
		Trim	T1	T3	T2	T4								
	HR3	Channel	AIL	ELE	THR	RUD	Gyro	PIT	Governor	Needle	Gyro2	Gyro3	Aux2	Aux1
		Control	J1	J3	J2	J4		J2		LS				
		Trim	T1	T3	T2	T4								
	H-3	Channel	AIL	ELE	THR	RUD	Gyro	PIT	Governor	Needle	Gyro2	Gyro3	Aux2	Aux1
		Control	J1	J3	J2	J4		J2		LS				
		Trim	T1	T3	T2	T4								
	HE3	Channel	AIL	ELE	THR	RUD	Gyro	PIT	Governor	Needle	Gyro2	Gyro3	Aux2	Aux1
		Control	J1	J3	J2	J4		J2		LS				
		Trim	T1	T3	T2	T4								
	HN3	Channel	AIL	ELE	THR	RUD	Gyro	PIT	Governor	Needle	Gyro2	Gyro3	Aux2	Aux1
		Control	J1	J3	J2	J4		J2		LS				
		Trim	T1	T3	T2	T4								
	H4X	Channel	AIL	ELE	THR	RUD	Gyro	PIT	Governor	ELE2	Gyro2	Gyro3	Aux2	Aux1
		Control	J1	J3	J2	J4		J2						
		Trim	T1	T3	T2	T4								
	H-4	Channel	AIL	ELE	THR	RUD	Gyro	PIT	Governor	ELE2	Gyro2	Gyro3	Aux2	Aux1
		Control	J1	J3	J2	J4		J2						
		Trim	T1	T3	T2	T4								

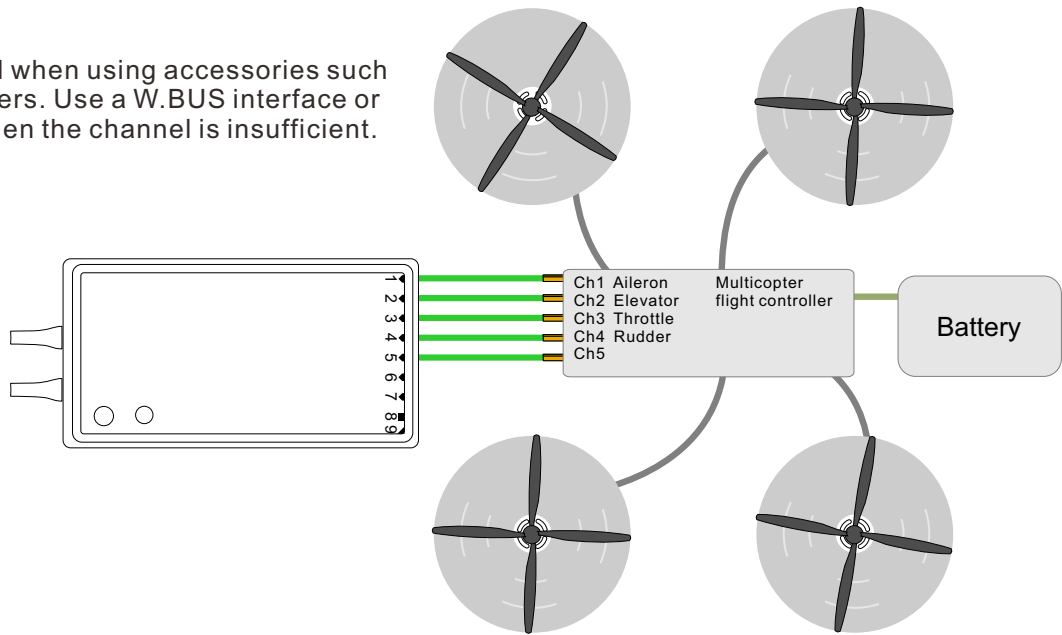
Swash Types



Receiver and servo connection example - Multicopter

The figure below shows the four-rotor multicopter. Please refer to the model manual for specific applications. Motor, electronic speed controller, flight controller, battery, etc. are sold separately.

Use 5CH-9CH when using accessories such as camera shutters. Use a W.BUS interface or dual receiver when the channel is insufficient.



This figure is for illustrative purposes only. Link amplification also changes depending on the multicopter collective and the flight controller. Please connect according to the instruction manual of the multicopter kit to be used.

Servo connection position (Multicopter)

Type		CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10	CH11	CH12
Multicopter	Channel	AIL	ELE	THR	RUD	Flight mode 1	P&T PITCH	P&T Around	Camera record	Aux4	Aux3	Aux2	Aux1
	Control	J1	J2	J3	J4		VL	VR	SH				
	Trim	T1	T2	T3	T4								

Basic setting sequence of airplane and glider

1. Call of the model

The ET12 transmitter has 30 built-in models from the factory, and you can use the [Model Selection] under [General Menu] to call up the existing model. The Rename feature makes it easy to make a selection call to a model whose name has already been set.

The name of the model currently in use is displayed on the home page. Before flying and changing the parameter settings, be sure to determine if the correct model is selected.

When a new model is added, please select [Type Selecting] under [General Menu] according to the model used. If a new receiver is used, the receiver's code operation is also required ([Linkage Setting]-[Link])

2. Model type selection

Use the [Type Selecting] function under [General Menu] to select the model type, wing type, and tail type that match the model airplane.

For example, the left and right azimuth servos can be selected from the main wing type by selecting "2 ailerons" and adjusting the two servos in [Sub-Trim] and [End Point] respectively.

3. The fuselage control part connect

Install the ailerons, elevators, throttles, rudders, etc. as required by the model aircraft product specification. For the connection method, refer to the "Receiver and Servo Connection Example - Airplane" (P19) and the "Receiver and Servo Connection Example - Glider" (P20) section.

Note: ET12 transmitters have different channel assignments depending on the model type, so please pay special attention (in the [General Menu] option under General Menu), you can check the allocation of each channel).

- If the direction of the actual connection is opposite to the direction you want, you can use [Reverse Setting] under [General Menu] to adjust the direction.
- Install the throttle section to ensure that the carburetor/electronic governor can be fully open or fully closed.
- Use the [End Point] under [Function] to adjust the end point and rotation angle of each rudder surface, and use the [Sub-trim] function and the [End Point] function to make fine adjustments. In order to protect the connecting rod, the stroke limit position can be set in the [Rudder Angle Setting] function item. [End Point] function item can adjust the up and down or left and right movement amount of each rudder surface And limit.

4. Throttle Cut Setting (Airplane)

The [Throttle Cut] function allows us to turn off the engine by only one switch without affecting the throttle trim position (after idle adjustment).

* When the [Throttle Cut] function is activated, the engine flame out position will be fixed. If the throttle cut switch is not required, use the [Idle Down] setting function below.

Please use the [Throttle Cut] function option

under [Model Menu] to set. After the flame out function is activated and the corresponding switch is selected, the throttle position will be adjusted until the carburetor is fully closed. For safety reasons, the activation position of the throttle lever position corresponding to the throttle stop function can be set separately.

5. Idle Down setting (Airplane)

The [Idle Down] function option is located under [Model Menu]. * When the [Throttle Cut] function is operated, the [Idle Down] function will not be activated. Without changing the throttle trim position, using a switch can reduce the idle speed of the airplane.

After activating this function and selecting a switch, you can adjust the desired number of idling revolutions. For safety reasons, this function is only activated when the throttle lever is in the lower position (approximately 1 / 3 of the total stroke).

6. Dual Rate Settings

[Dual Rate] function is to match the feeling of control and adjust the rudder angle, which makes the control more convenient. The basic operating range of the steering gear is set in the [End Point] function under [General Menu], and the steering feel is adjusted by the [Dual Rate] ratio function of the [General Menu]. In addition, after setting the rudder angle ratio, it can also be switched by the switch or flight condition, and the flight action can be used to call up the set rudder angle.

7. Air brake

[Air Brake] function is used when landing, etc., when the sliding angle is large but the speed is no need to be increased. This function can only be used on models with [General Menu] - [Model Selecting] and "2 Ailerons" on the wing. * Normally, the left and right ailerons are simultaneously set to the upward movement, and the pitch of the nose can be corrected by the elevator mixing when the function is started.

8. Flight conditions

The factory default setting assigns only one flight condition per model. Only one flight condition can support basic flight without barriers, but if you are in a competitive situation such as a game, you need more detailed settings. Through the [Flight Condition] function in [Model Menu], you can select the required flight conditions more effectively. It can also be set for the switch of the condition switch and the name of the condition. After the flight condition setting is completed, the switch needs to be operated, and the condition name displayed on the interface is confirmed.

Basic setting sequence of the helicopter

1. Model addition and invocation

Please refer to the first part of the previous section "Basic Operation - Basic Settings of Fixed Wings and Gliders".

2. Model type and swash plate type selection

If you have already set up a model, use the [Model Type] selection interface to select the helicopter in [Model Function], and then select the swash type according to the model.

3. Flight conditions setting

The default setting contains the common mode (default naming) conditions.

There are 5 conditions that have been set.

- Normal
- Idle 1 (SE)
- Idle 2 (SE)
- Idle 3 (SF)
- Hold

*This switch is not set in the default settings

Examples of common flight conditions settings:

- Normal: (for default settings, switch off) usually starting, hanging

Use when stopped.

- Idle 1: (Starting when the SE switch is in the middle position) is usually used to lose Speed reverse, muscles and other Idles.
- Idle 2: (Starting when the SE switch is forward) is usually used for roll.

- Lock: (usually set to start when the SG switch is forward) Usually in self Used in the spin state.

The priority of these operating conditions is

1, Hold (Throttle Hold)

2, Idle 2

3, Idle 1

4, Normal

5, The lock mode has the highest priority

4. Body control connecting rod installation

Install the throttle, tail rotor, aileron, elevator, pitch, etc. as required by the model helicopter product specification. The connection method can be referred to the "Receiver and Servo Link Example - Helicopter" (P21) section.* In the [Function] option under [General Menu], you can check the allocation of each channel.

- If the direction of the actual connection is opposite to the direction you want, you can use [Servo Reverse] under [General Menu] to adjust the direction. In addition to the H-1 mode, you can also change the direction using the [Swash] function.

- Set the direction of the gyroscope (this is the "Gyro" function)

- The throttle section should be installed to ensure that the carburetor can be completely closed when Trim is fully closed.

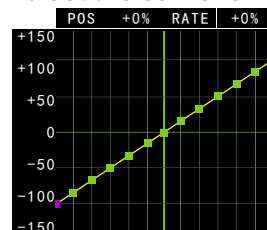
- Use the [End Point] under [General Menu] to adjust the ravel amount and rotation angle of each rudder surface, and use the [Sub-trim] function and the [End Point] function to make fine adjustments. In order to protect the connecting rod, the travel limit position can be set in the [End Point] function item. The [End Point] function item can adjust the up and down or left and right movement amount and limit of

each rudder surface.

The swash calibration (except H-1 mode) can calibrate the swash motion by the correction mixing control of the [swash] function. This function is required when the pitch, aileron, and elevator operations cause the swash to deviate from the correct elbow. In addition, the pitch of the link at the low point and the high point can also be calibrated, which is used to ensure the horizontal state of the swash in the full stroke range.

5. Throttle Curve, Pitch Curve setting

Bring up [Throttle Curve] or [Pitch Curve] from the [Model Menu] and set the curve for various flight conditions.



<Setting example>

Use the flight condition selection switch to bring up the throttle curve for each flight condition.

Throttle curve setting example is as follows:

- Throttle curve (General)

The normal curve uses a normal line type, and the basic pitch curve is set near the hover point (50% of the stick). This curve is usually adjusted with the pitch to ensure that the engine speed is uniform and the up/down action is easy to handle.

- Throttle curve (Idle 1)

This setting is to maintain stick rotate when the throttle lever is in the low position.

- Throttle curve (Idle 2)

This setting maintains rotation when the throttle lever is in the low position and there is no pitch.

- Setting when the condition is locked

Note: The throttle lock curve is used for the spin landing action. Please confirm the ratio of the lowest position of throttle control stick is 0% (this is the initial setting).

Examples of pitch curve settings are as follows:

The pitch curve can be called up under each condition using the flight condition selection switch.

- Pitch curve (General)

In the pitch curve, the hover pitch is usually set to approximately $+5^{\circ} \sim +6^{\circ}$. Under normal circumstances, the throttle stick is hovered at 50% position as the standard.* Stable hovering is also related to throttle curve setting. It is easier to achieve stable hover by using throttle curve adjustment and pitch curve adjustment.

- Pitch curve (Idle 1) The pitch curve of the effect 1 is usually used for air flight, and is generally set to $-7^{\circ} \sim +9^{\circ}$.

- Pitch curve (Idle 2) The setting of the high point bit 1 is slightly lower, and the value is set to about $+8^{\circ}$.

- Pitch curve (HOLD) In the throttle lock and spin drop conditions, the pitch should be set to the

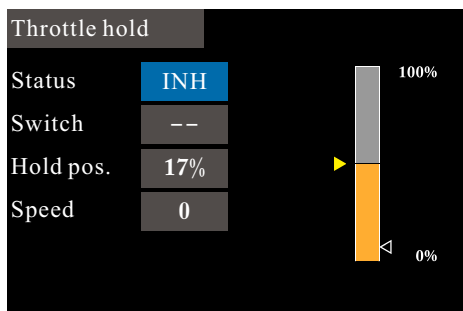
Basic setting sequence of the helicopter

maximum in both the positive and negative pitch directions. For example, from -7 to +12°

6. Throttle Hold Setting

In the model menu, call the [Throttle Hold] function setting interface, and use the [Fly Condition] switch to switch to the throttle lock condition interface.

Lock position setting: This function is used to set the working position (extinguish or idle position) of the servo under the throttle lock state.



7. The Swash Mixing Controls the Interaction of the Ailerons, Elevators and Paddles

Through the [Swash Mixing] under [Model Menu], the mixing ratio of each operation of the aileron, elevator, and pitch can be adjusted to ensure that the swash is corrected under each condition.

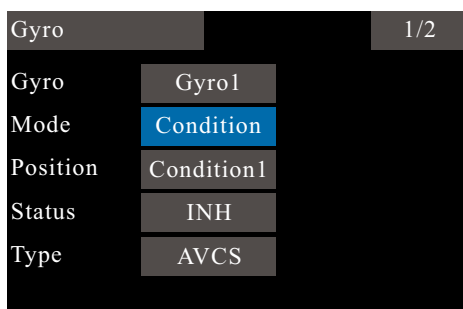
8. Throttle Mixing Setting

The swash aileron and elevator action will cause the engine speed to decrease. This phenomenon can be compensated by [Throttle Mixing] under [Model Menu]. In addition, the clockwise and counterclockwise torque changes can be compensated for when the body rotates.

9. Gyro Sensitivity Adjustment and Mode Switching

In the [Gyro] mixing function under [Model Menu], you can adjust the gyro sensitivity or mode switching for each condition or switch position.

- Normal (hover flight): The gyroscope is the most sensitive.
- Idle 1 / Idle 2 / Throttle Hold: Gyro sensitivity is minimal.

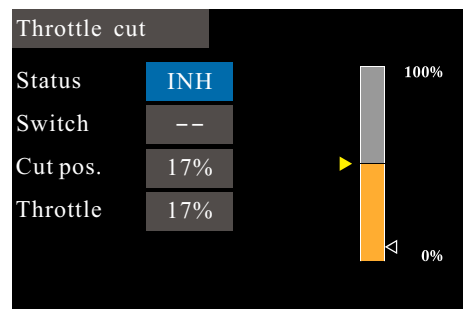


10. Throttle Setting

At the end of the flight, there is no need to change the position of the throttle trim, just turn off the engine by simply turning a flameout switch.

Set in the [Throttle Cut] function of [Model Menu]. Set the throttle lever to idle speed and adjust the rotation position of the flame-extinguishing servo until the damper can be closed and the movement is unimpeded.

*The throttle trigger position can be set separately.



System Setting

Trainer

Interface Path: WFLY → [System Setting] → [Trainer]

Trainers can assist students in learning flight skills and improving flight levels based on their flight experience and operational level. A special trainer line (sold separately) is required between the trainer and the trainer to connect. The trainer must turn on the trainer mode before the trainer can be operated. When the trainer switch is turned off, it will return to the trainer transmitter to control the flight. When the student machine flight is dangerous or the deviation is too large, the trainer can be switched immediately to ensure safety.

When using the WFT08/09 as a trainer, please purchase a universal analog patch cord, 3.5mm male to male audio cable. (The coaching line and audio cable need to be purchased separately. Two cores and three cores are available.)

Trainer		1/2
Mode	Trainer	
Teach SW	--	
CHmode	12CH	
CH	Status	
1 Aileron	ON	
2 Elevator	ON	

Mode: Normal, Trainer, Simulator, Student

- Normal: Default mode (non-"Trainer", "Student" mode using trainer function may cause malfunctions!)

- Trainer: Control transmitter;

- Simulator: When the flight is practiced through the computer-side simulator, the RF is turned off, reducing power consumption. To extend the working hours of the transmitter;

-Students: Turn off RF transmission, only the trainer turn on the Teach switch can trainer channel could be controlled! (Example: The trainer model has only three channels: aileron, direction and gyro, so the student can only control these three channels when the coach turn on the trainer switch.)

Trainer Switch: Default [--]

Channel Mode: default is "12 channel" setting; "8 channel mode" is compatible with WFLY training function of the "WFT" series products. The trainer's two ET12s need to be set up to the same mode.

Status: Each channel status switch of trainer. Turn on, students can be controlled; off, students Uncontrollable

*The following trainer functions take the same model as an example.

Trainer Setting:

Trainer switch → Trainer, channel mode → 12 channels, channel status → Turn on with demand (status is the same as the student machine).

* The channel defaults to full on, and the visual model and actual application are adjusted.

Student Setting:

Trainer switch → student, channel mode → 12 channels, channel status → Turn on with demand (status is the same as the trainer).

* The channel defaults to full on, and the visual model and actual application are adjusted.

NOTICE

Be sure to check that all channels of the trainer and the student can be operated normally before flying. Be sure to insert the interface of the trainer line to avoid loosening.

System Setting

Display

Interface Path: WFLY → [System Setting] → [Display]

Adjust the brightness of the display backlight, the shutdown time, and the lock screen time to adapt to different environments and energy saving.

Display	▼	▲	
Backlight max	10		The backlight switches to the "Backlight max" value!
Backlight min	10		The darkest brightness value of normal standby.
Time	30Sec		It means that no button and touch screen operation time is detected after setting value.
Auto off time	Never		
Auto lock	Never		The transmitter is turned off after no operation.
			Lock screen after when the touch screen has no operation.

Parameter Value Setting(taking the maximum backlight as an example):

Click the "Backlight max" value box and click the parameter adjustment buttons [▼], [▲] according to the visual effect.

The maximum backlight, the default is 10, the range: 1~20, the setting value can't be lower than the minimum backlight setting value.

The minimum backlight, the default is 10, the range: 1~20, the setting value can't be higher than the maximum backlight setting value.

Backlight time, default 30 seconds, 15 seconds, 30 seconds, 1 minute, 2 minutes, 5 minutes, 10 minutes, always bright.

Auto power off time, default off, 30 minutes, 40, 50, 60 minutes, off.

Automatic lock screen time, default off, 15 seconds, 30 seconds, 1 minute, 2 minutes, 5 minutes, 10 minutes, off.

WARNING

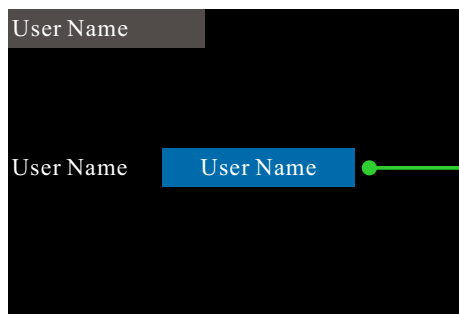
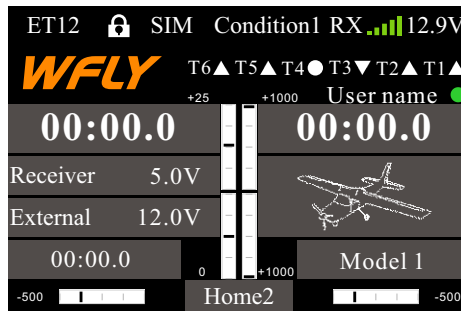
High brightness display will increase the energy consumption of the transmitter, which will affect the working time of the transmitter. Please pay attention to setting the transmitter voltage alarm. Pay attention to the battery level and avoid low battery operation of the transmitter.

System Setting

User Name

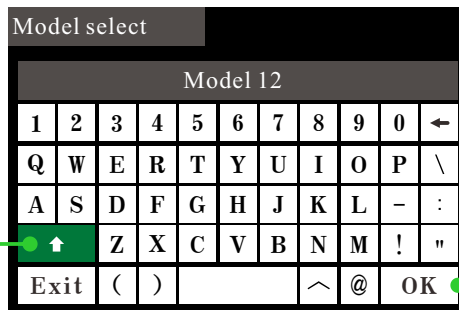
Interface path: WFLY → [System Setting] → [User Name]

The user defined name is composed of up to 9 characters and supports English character input, which can be displayed on the standby interface.



*The keyboard can only be operated by touch screen.

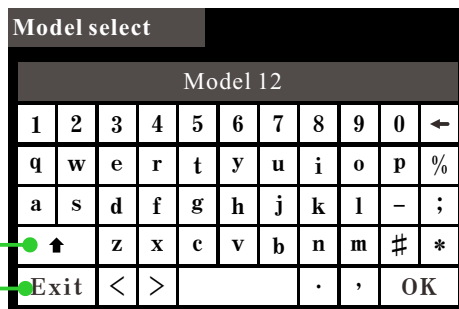
*The naming needs to be confirmed before the modification can be saved.



Confirmation key
(Save key)

Case switch key

Turn off keyboard
Unname



System Setting

Sound

Interface path: WFLY → [System Setting] → [Sound]

The sound helps the flight process to notice various anomalies or planned audible prompts.

The sound is associated with the model, and the prompt tone can be set according to the requirements of each model.

Sound		▼	▲
Warnin	80		
Telemetry	80		
Button	50		
Other	50		
Trim	80	Voice	
timer	80	Voice	

Volume Voice

WARNING To ensure safe operation, be sure to turn on the Sound!

Warning

Interface path: WFLY → [System Setting] → [Warning]

After the function is turned on, there will be a corresponding detection reminder when the power-on detection.

Under setting conditions, there will be an interface, sound, and vibration prompts when the transmitter detection is in effect. Vibration tips can be set individually.

Warning		
	Alarm	Vibrator
Condition	ACT	INH
THR cut	ACT	INH
Idle down	ACT	INH
THR posi.	ACT	INH
Airbrake	ACT	INH

Parameters Setting (Enable the "Flight Condition" alarm with vibration function as an example):

Click the "Alarm button" on the right side of "Flight Condition" and the function will switch to "ACT"; click the "Vibrator button" on the far right to switch to "ACT".

*Vibrator function may affect the focus of individual user operations, so the default status is inhibit.

Different models will have different warning content

Helicopter: flight condition, throttle cut, idle down, throttle position, throttle hold.

Airplane: flight condition, throttle cut, idle down, throttle position, air brake, motor, throttle hold.

Glider: flight condition, throttle cut, idle down, throttle position, motor, throttle hold.

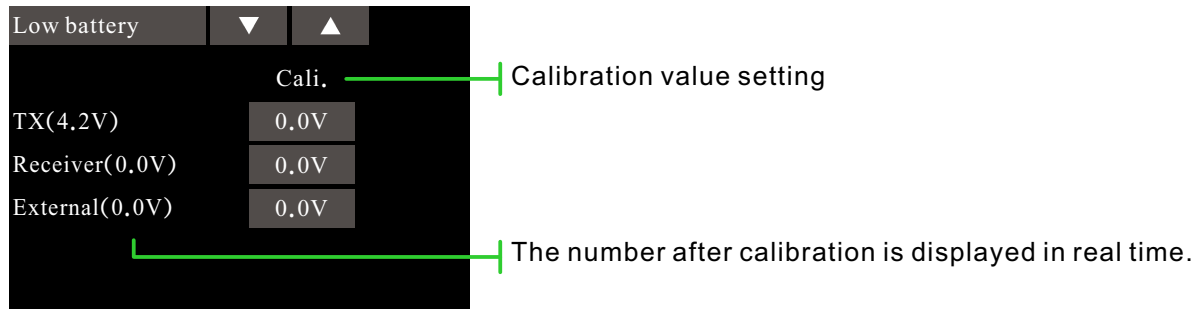
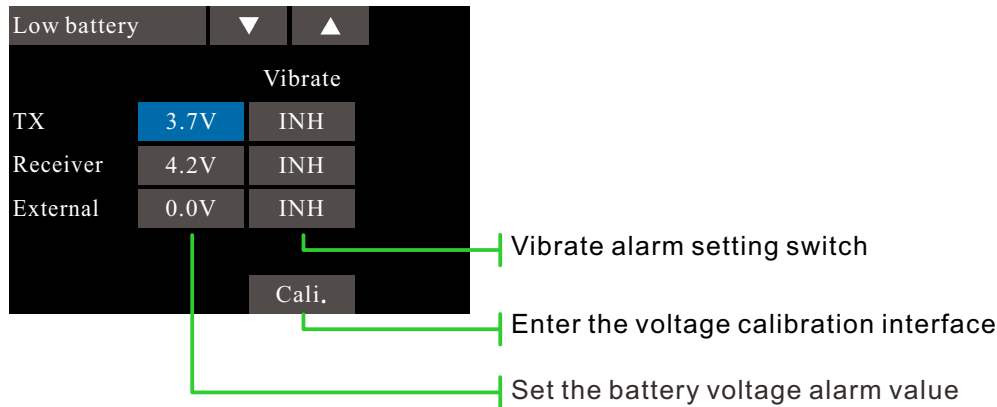
Multicopter: flight condition, throttle cut, throttle position, throttle hold.

System Setting

Low Battery

Interface path: WFLY → [System Setting] → [Low Battery]

By setting the alarm trigger value, an alarm is given at low voltage. Avoid accidents caused by long-term operation of the control system under low voltage conditions



Calibration: Due to possible errors in the electronic components, there may be errors in the measured voltage and the actual battery voltage. The user can correct the error by the voltage calibration function.

WARNING

When the alarm sounds, please pay attention to what type of warning is displayed on the screen at the right time ASAP to avoid running in an abnormal state for a long time!

Parameters Setting (transmitter alarm value):

Click the "Transmitter" value box and click the parameter adjustment button according to factors such as battery life and performance.

Transmitter, default 11.1V, range: 3.5-12.6V (3S).

Receiver, default 4.2V, range: 3.6-8V.

External voltage, default 0V, range: 0-96V.

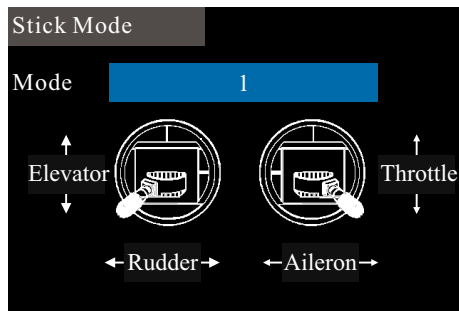
*The above data defaults to lithium battery. For other battery types, please refer to the battery's instruction manual.

System Setting

Stick Mode

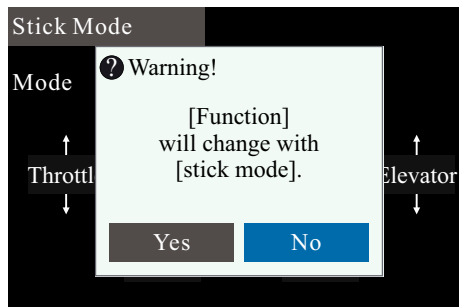
Interface path: WFLY → [System Setting] → [Stick Mode]

Provides 4 operating mode options, in addition to the [Function] user defined the mode: You need to modify the definition in [Function]. After the modification, the [Stick Mode] interface mode changes to "User Defined". ([Function] 1-4 channel stick setting)



NOTICE

Change the stick mode, which involves the [Function] content.



System Setting

Calibration

Interface path: WFLY → [System Setting] → [Calibration]

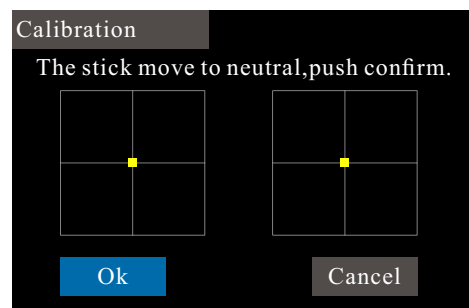
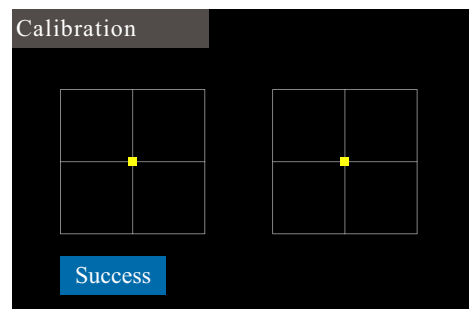
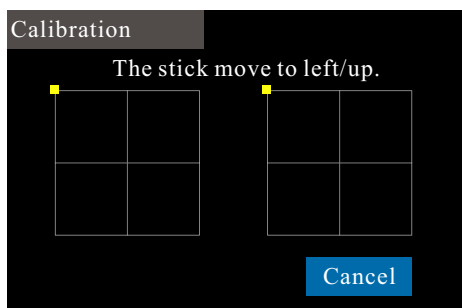
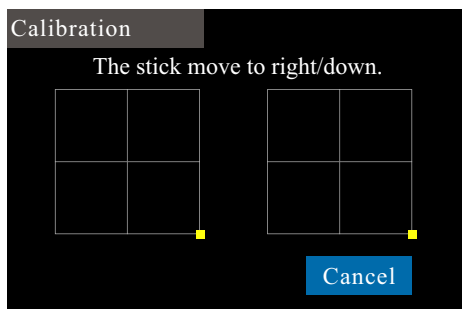
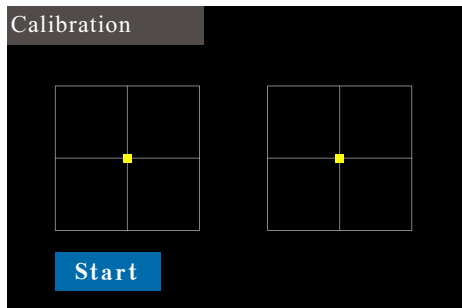
The stick has been calibrated at the factory. If the center position of the stick changes, you need to use this function to calibrate the stick.

DANGER

System security: Calibration performed under the connection state of the receiver may cause wrong operation. Therefore, when the system detects the receiver operation (the telemetry function is required when the link is required), it cannot be calibrated by default!

NOTICE

For calibration, please refer to the scale of the assembly surface for alignment!
If the calibration process cancels or exits the function interface, the calibration is invalid!



The system automatically identifies the stick position, and start the next action prompt.

Telemetry Voice

Interface path: WFLY → [System Setting] → [Telemetry Voice]
Set up telemetry voice broadcast.

Telemetry voice	▼ ▲
Status	ON
Switch	--
Speed interval	30Sec
Alarm repeat	1
Alarm duration	10Sec

Speed Interval of two broadcasts (broadcast frequency)

The number of repetitions in each broadcast report

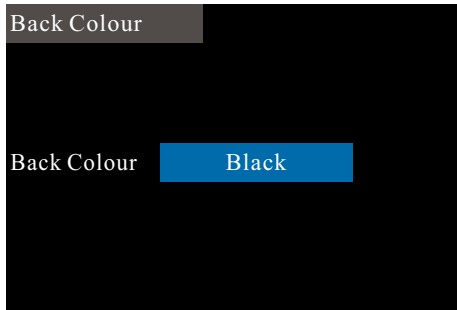
Times of alarm

Voice broadcast interval, default 30S.
Repeat the alarm, the default is 1 time.
The number of alarms, the default is 10S.

Back Colour

Interface path: WFLY → [System Settings] → [Back Colour]

This function enables the background color sets and taps the option to change the settings.



Back colour switching:

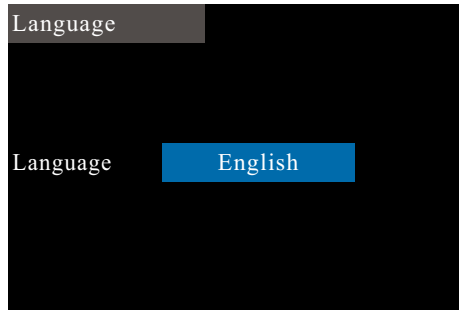
The default is black, in order to adapt to the visual effects of different environments, you can switch to other back color.

System Setting

Language

Interface path: WFLY → [System Setting] → [Language]

Select the language displayed on the interface, ET12 provides Chinese and English display.



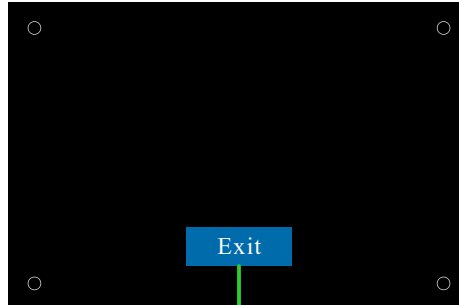
Language switching:

Currently interface is Chinese,click the “Language” button and then the interface language will switch to English.

Screen Cali(Calibration)

Interface path: WFLY → [System Setting] → [Screen Cali]

Depending on the characteristics of the resistive screen, the corresponding contacts may drift after prolonged use. It is therefore necessary to recalibrate the coordinate position of the touch point of the screen.



Exit the calibration interface and return to the previous menu!

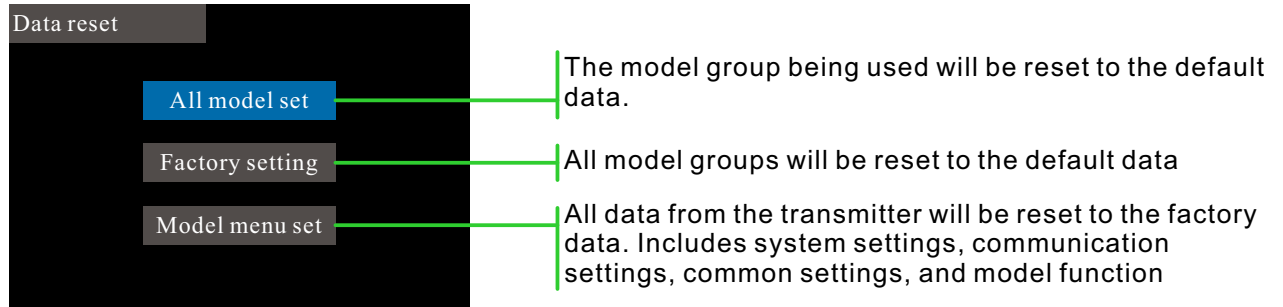
Calibrate the touch screen operation:

According to the small circle displayed on the screen, click the center of the circle; click four times to complete the calibration and return to the menu list.

Data Reset

Interface path: WFLY → [System Setting] → [Data Reset]

Reset the transmitter's selected parameter settings. The “ Factory Date Reset” operation is with large amount of data, please be patient when performing this operation.



NOTICE

This function will clear the exist model data!

Information

Interface path: WFLY → [System Setting] → [Information]

Displays system version information and system upgrade entries. There is also the WeChat public number of WFLY Technology, which uses WeChat to scan and add attention. Send "ET12 upgrade package", you can view or download related information.

Upgrade

The upgrade process requires the use of a computer (currently supports WINDOWS system WINXP\7\8\10), the main steps are as follows:

- 1 Drive installation
- 2 Transmitter upgrade
- 3 Receiver upgrade
- 4 Verify the upgrade.

Upgrade package obtain method

1 Official website download. Log on to www.wflysz.com, click on the ET12 product page, click on "Support Downloads" at the top of the product description, find the relevant download link, and click the download button on the right to download.

2 WeChat PC side download. Log in to WeChat, open the "WFLY" WeChat official account, send the text "ET12 upgrade package", you will receive the download link of the latest upgrade toolkit, click the driver link, you can directly download and save to the PC.

For specific installation methods, please refer to the instructions in the upgrade package, or visit the official website to view the upgrade instructions in the ET12 model "Frequently Asked Questions" under "Technical Support".

Please contact customer service, If you can't install the machine!



NOTICE

Please ensure that the transmitter is fully charged during the upgrade process

WARNING

The wrong upgrade pack will render the machine unusable and unable to force an upgrade

*The upgrade kit version number varies according to the downloaded version

Screen lock set

Lock screen description: The user can set the lock screen corresponding operation mode according to the specific use scene or personal operation habits, so as to avoid accidental operation and change the remote controller parameters.

Screen lock set	
Touch	ON
Cursor	OFF
Menu/exit	OFF
Trim	OFF

Linkage Setting

Link

Interface path: WFLY→[Linkage Setting]→[Link Step]

The link function is used for matching the transmitter and receiver.

Telemetry: Data backhaul function. Mainly used for functional judgment and data analysis, shutdown telemetry will affect the use of security functions. The default Telemetry is on, it is recommended to turn on!

Mode: Working mode selection(default working mode A). Please refer to the table on the right. The channel marked in the table is defined as the default configuration. You can customize the channel by [Receiver Output].

Link: Immediately link the transmitter and receiver. Clicking link will bring up the confirmation box.

Receiver slot	Channel User defined	
	Model A	Model B
1	1	7
2	2	8
3	3	3
4	4	9
5	5	10
6	6	11
7	7	12
8	W.BUS/PPM	W.BUS/PPM
9	W.BUS2	W.BUS2

Link steps (default working mode A)

1, Transmitter, enter into the menu [Linkage Setting] → [Link], standby.

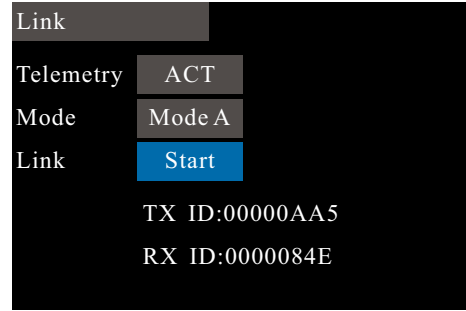
2, Charge the receiver, pressed SET button for 3 seconds, the LED orange light flashes.

3, Transmitter, the telemetry function is default, click the Link of "Start" button, the RF light flashes.

4. Verify the Link method:

1 Successfully linked, and the receiver LED light turns to solid green.

2 Connect to the servo, operate the transmitter, when the corresponding servo has synchronous output action it means link successfully.



ID display would be enabled only after successfully linking

NOTICE

1. The transmitter and receiver must be close to each other (less than 1 meter);
2. The transmitter cannot perform link operation in the simulator and student mode ([System Setting] → [Trainer] to set);
3. There is no other WFLY 2.4GHz system in progress.
4. In the process of linking, if you need to exit the link, click the "Cancel" button or press the Back button.
5. After finished the link, the connection verification must be performed.
6. Telemetry: Disabling this function when link will affect the use of [Range check] [Low battery] [BUS Servo Setting] [Telemetry], ect.

WARNING

When linking, please be careful not to connect the power equipment, and remove the propeller, pay attention to safety!
To ensure safety, please do not link in the status where the motor and engine are running.

Linkage Setting

Telemetry

Interface path: WFLY → [Linkage Setting] → [Telemetry]

The telemetry interface displays the receiver's return data.

Telemetry	
Receiver	3.7V
External	3.7V

NOTICE

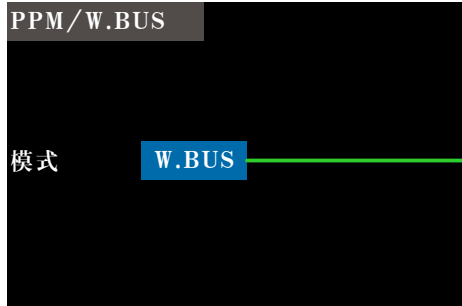
Disabling the "Telemetry" function when linking will affect the use of [Range Check][Low Battery][BUS Servo Setting] and [Telemetry] ect.

PPM/W.BUS

Interface path: WFLY → [Linkage Setting] → [PPM/W.BUS]

Switch the receiver PPM/W.BUS output mode.

* Different receivers, different ports.



PPM mode. The 8th port of the RF209S outputs with a standard 4096 resolution and 8 channel PPM signal.

W.BUS mode. Compatible with S.BUS signals.

Switching the 8th port mode of the receiver:

1 When the receiver is connected, click the mode button to switch the mode, click the function title in the upper left corner to return to the previous menu and save the changes.

2 Please refer to the “Receiver manual instruction” section (page 18) “PPM/W.BUS Interface Operation Mode Selection”, and the receiver can also directly switch the 8-port mode.

Receiver Output

Interface path: WFLY → [Linkage Setting] → [Receiver Output]

This function is used to customize the port output function channel of the receiver. For the corresponding channel function, please go to [Function] of [General Menu] to set.

All ports can be customized channels, but PPM and W.BUS can only be set to 8 ports, and W.BUS2 can only be assigned to 9 ports.

(RF209S receiver).

Note: [Receiver Output] needs to be set with only one receiver connected.

Receiver Output			
Port	CH	Port	CH
1	1	6	6
2	2	7	7
3	3	8	PPM/W.BUS
4	4	9	W.BUS2
5	5		Reset

Mode A

Receiver Output			
Port	CH	Port	CH
1	7	6	11
2	8	7	12
3	3	8	PPM/W.BUS
4	9	9	W.BUS2
5	10		Reset

Mode B

Port setting instructions:

1 As shown above, port 1, the system defaults to channel 1, you can also set to 2-18 channels.

2 The Reset button resets all ports to their default configuration.

*Set the receiver to be connected, enter the interface to read the current receiver parameters, exit the interface and save the current receiver settings.

Linkage Setting

Fail Safe

Interface path: WFLY → [Linkage Setting] → [Fail Safe]

With this function, when the receiver cannot receive the signal normally, it will automatically run, and the servo rocker arm will move to the preset position (preset action). Used to protect aircraft and reduce unnecessary losses.

For each channel, three protection modes can be set.

1 Hold: Hold mode, the servos remain unchanged in the last operating position before fail safe. (keep the action).

2 F/S: Fail Safe mode, after the controller is under fail safe, the servo is rotated to the preset position (preset action).

3 Off: Turns off the current channel output. (Only for some special models or some of the flight control board detection ports).

Fail Safe		1/2
1 Aileron	OFF	
2 Elevator	OFF	
3 Throttle	F/S	-152%
4 Gyro	OFF	
5 Gyro	OFF	
6 Pitch	OFF	

F/S value: Click the corresponding key to the value or press the confirm key to get the current stick or switch position parameters. (F/S value can only be displayed and set in F/S mode)

WARNING

For your safety, be sure to set up fail safe protection. Especially the Fail Safe of the throttle channel. In that way, the airplane flight speed is reduced and the helicopter is decelerated from the hovering state. It is very dangerous to drop the plane at high speed due to fail safe.



Mandatory

If your operation does not allow the model to move in an unexpected pose, be sure to land the monitor to check the receiver's battery or the body.

Reference:

Model fail safe is very dangerous, so you should be careful when setting this function, you can refer to the following suggestions, or send an email to service@wflysz.com or add Skype/WeChat/WhatsApp account: +86-189 2382 0083.

Setting reference (only recommended settings, please set according to your actual flight situation):

1. The helicopter throttle is set to the lowest value, and the remaining channels are set to run smoothly.
2. The airplane/glider throttle is set to the lowest or low idle speed, and the other channels are set to run smoothly (or hovering), because the airplane/glider can slide down without power.
3. Please refer to the flight control manual for multicopters.

Parameter value setting (Example: Airplane 3 channel value setting Fail Safe):

Model setting requirements: Airplane channel 3 defaults to throttle channel, we need to slow down the glide after the model loses signal.

Operation: Click the button on the right side of channel 3 to switch to "F/S" mode. The value button appears on the right side of the button, and the transmitter throttle channel hits the lowest.

When the throttle position is selected, click the value button of channel 3 (or click the confirmation button when the cursor is on the channel 3 value button) to set the current channel action.

* The action preset for the specific runaway protection is related to the actual model. Please check the model manual.

(Settings need to be connected to the receiver. When exiting this operation interface [Fail Safe] All the parameters set are automatically saved to the receiver)

Additional protection features:

The ET12 provides active protection. As long as the telemetry function is turned on, as long as the RF209S receiver is still powered on, the transmitter needs to be confirmed to shut down! It can prevent the receiver from inadvertently shutting down and actively enter the F/S state, so that the model can make unexpected and dangerous actions to avoid loss and damage.

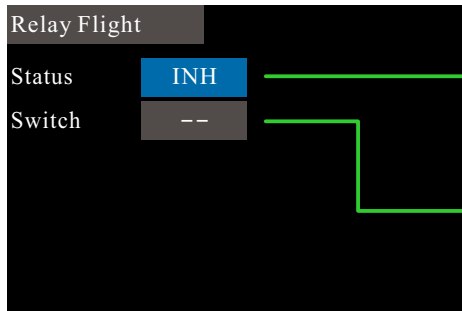
Linkage Setting

Relay Flight

Interface path: WFLY → [Linkage Setting] → [Relay Flight]

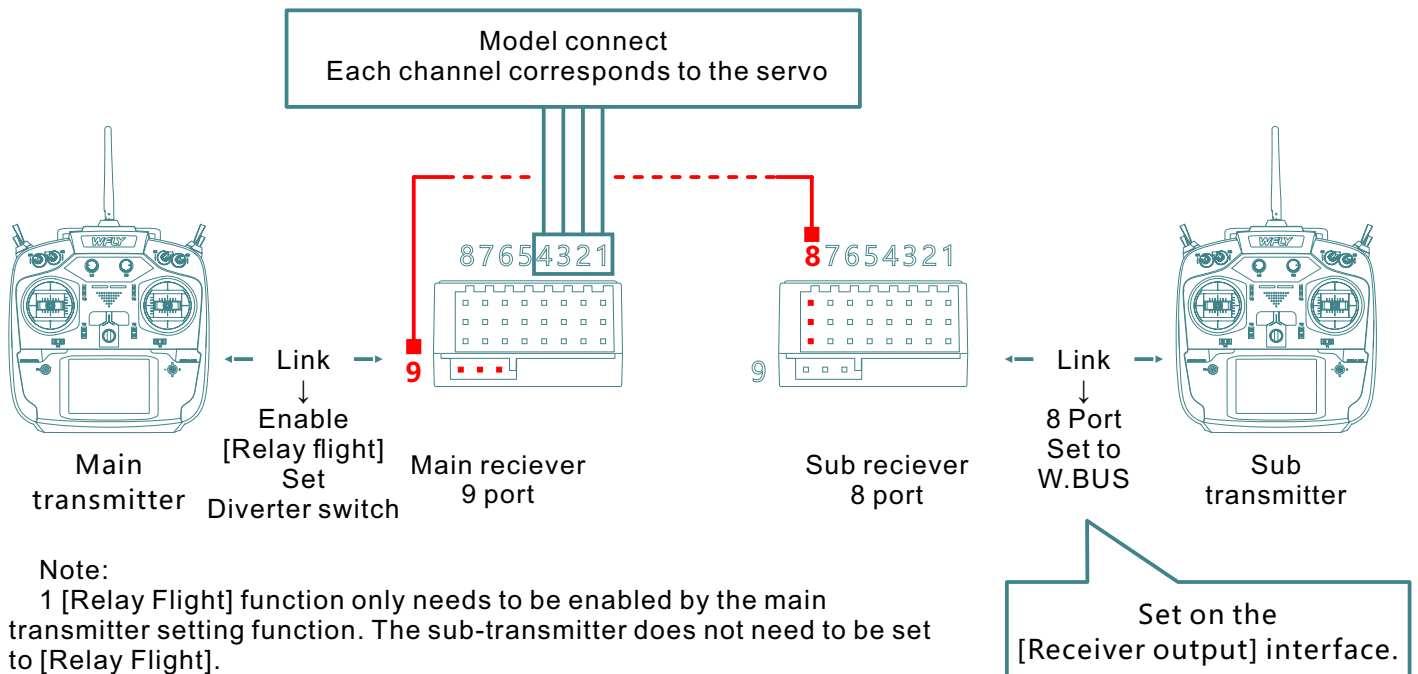
This function is a flight control mode that uses two transmitters, two receivers, and one model aircraft to achieve long-distance relay control. The main and the sub-transmitter are linked separately with the receiver, the eighth pin header (PPM/W.BUS) of the sub-receiver RF209S connect with the ninth pin header of the main receiver.

(W.BUS2) connection. The host transmitter is in the [Main Menu] - [Linkage Setting] - [Relay Flight] - Enable function and set the signal control switch.



Status: Set relay flight function enable/disable.
(The setting is valid only when the receiver is connected)

Switch: Set the control signal switch.
(When the switch is ON, it is controlled by the sub-transmitter. When the switch is OFF, the signal is controlled by the main transmitter)



Note:

1 [Relay Flight] function only needs to be enabled by the main transmitter setting function. The sub-transmitter does not need to be set to [Relay Flight].

2 Fail safe data needs to be set on the main receiver!

*Note <Main and Sub-transmitter Control Rights Status Table>

Notice: When the main transmitter is not connected to the main receiver and the relay flight status is "off", the main receiver is fail safe data and the sub-transmitter cannot control.

	Main transmitter	Sub transmitter	Relay flight status	Connection status	Output
1	No signal	With signal	On	Connected	Sub-transmitter
2	With signal	No signal	Off	Connected	Main transmitter
3	No signal	With signal	On	Connected	Main transmitter fail safe
4	With signal	No signal	Off	Connected	Main transmitter

Linkage Setting

Servo Frequency

Interface path: WFLY → [Linkage Setting] → [Servo Frequency]

When using the digital servo, adjust the receiver output frequency to match the operating frequency of the servo to better play the servo performance.

Adjust the output frequency of the receiver, the stroke is 50Hz~300Hz, and the setting is successful when exiting.



NOTICE

This function requires servo support and requires the transmitter and receiver to be in normal communication state for the settings to be effective! The system defaults to 50Hz. Do not change the servo frequency parametersr rat random. Otherwise there is the possibility of damage to the servo!

BUS Servo Setting

Interface path: WFLY → [Linkage Setting] → [BUS Servo Setting]

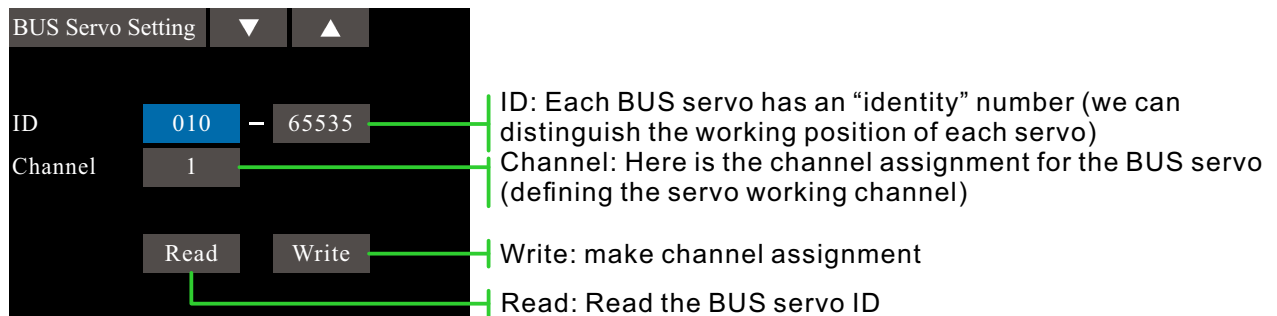
The BUS servo can memorize its own channel and different settings. The servo can be configured on the ET12 by connecting the servo via the W.BUS2 receiver interface. (WFLY W.BUS system is compatible with S.BUS servos !)

Notice:

1 Before using this function, you need to enable the [Telemetry] function and the receiver is connected normally.

2 When setting, only one BUS servo can be connected for setting at a time.

3 When using the BUS servo, ensure that the power supply is sufficient, otherwise the servo will have an abnormal situation such as unstable output!



Setting method: The use of W.BUS function is mainly to allocate channel parameters for BUS servo, which is divided into three main steps.

Prerequisite: The transmitter and receiver are linked (turn on telemetry) and communicate normally.

First, read the BUS servo ID.

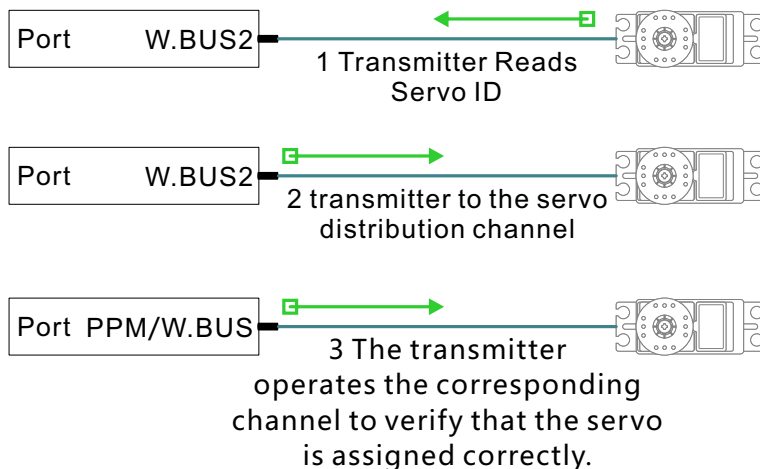
Connect the BUS servo to the "W.BUS2 slot" of the receiver and the transmitter clicks the "Read" button.

Second, the channel allocation.

In the "Channel" setting item, select the corresponding channel according to the function of the servo. Click the "Write" button, set the servo channel and complete the parameter saving, and exit the setting interface.

Third, verify the steering gear channel.

Turn on the monitor, connect the servo to the "PPM/W.BUS" interface, and operate the joystick or switch knob (currently connected to the channel set by the servo).



Linkage Setting

Range Check

Interface path: WFLY → [Linkage Setting] → [Range Check]

The range check is mainly used to test the distance.

Turn on the telemetry when linking. After linked, the transmitter receiver can be connected normally to use this function! Only enter this interface, after toggling the SH switch, the power will be reduced! The control distance is related to the actual use environment!

Range Check

Pull the switch(SH) to reduce the power of transmitter.

Power is normal

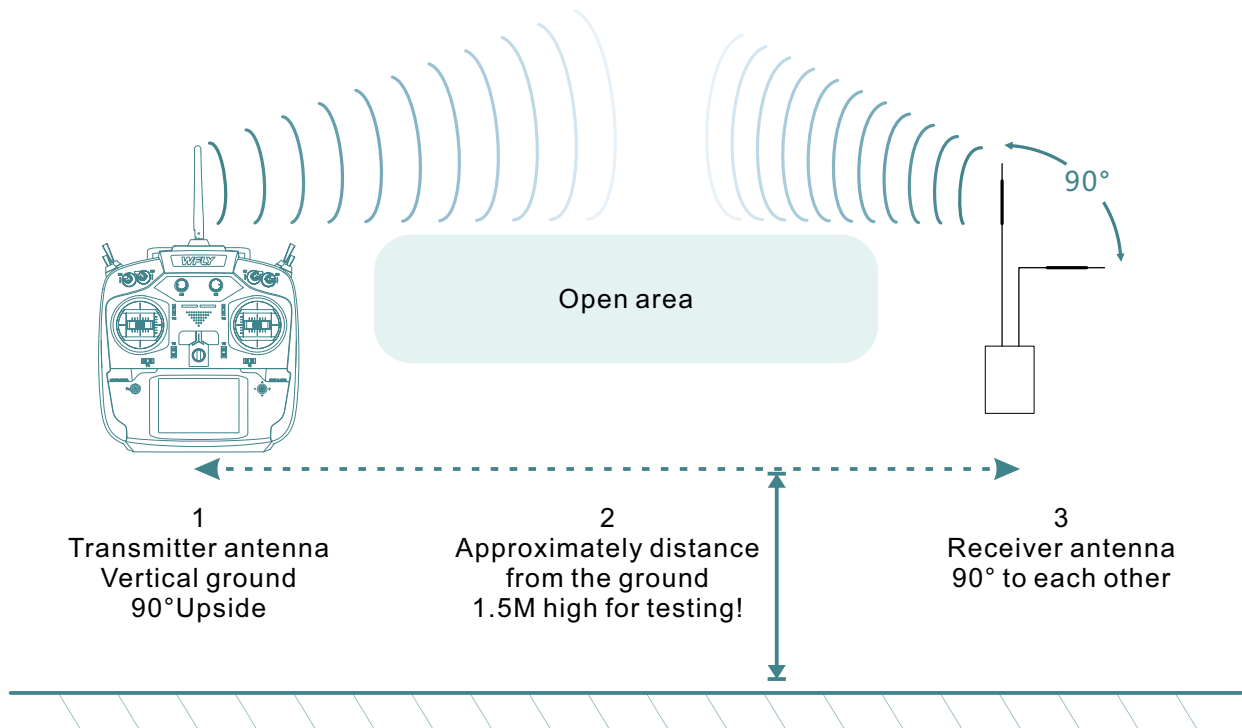
Signal strength 100%

Instructions:

1. Enter the interface and toggle the SH switch.
2. The transmitter and receiver maintain a certain height (about 1.5 meters above the ground) and the antennas are in the same direction (perpendicular to the ground).
3. The transmitter and receiver are powered, start moving position, and move the stick.
4. The transmitter checks the signal strength on the interface, and the receiver checks whether the status light and the servo dual rate are smooth. The above bring the comprehensive evaluation of the working distance!

Signal strength judgment:

The transmitter signal strength returned by the receiver can be viewed in the upper right corner of the screen status bar (the standby interface during normal operation) and the signal strength percentage indication ([Range Test] function interface). The more indicator bars, the larger the percentage value. The better the signal, conversely, the worse the signal. The status bar has no signal bar indication, and there is no signal when the signal strength is 0%.

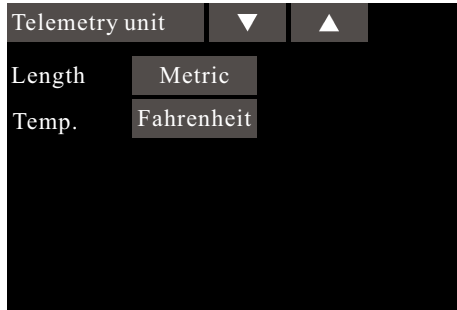


*[Rage Test] The results are for reference only and are not intended as the only performance standard, depending on the specific usage environment!

Linkage Setting

Telemetry Unit

Interface path: WFLY → [Linkage Setting] → [Telemetry Unit]
Set the unit for telemetry display.



Unit switching instructions:

For the length unit, click the unit name button on the right to switch. There are “metric” and “imperial” options, and the default is “metric”.

Temperature unit, click the right unit name button to switch, there are "Celsius", "Fahrenheit" option, the default "Celsius".

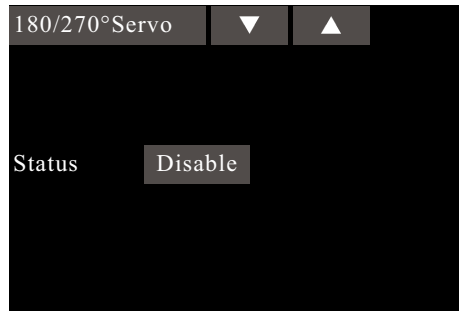
Linkage Setting

180/270° Servo

Interface path:[WFLY]→[Linkage Setting] → [180 / 270 ° Servo]

The 180/270° servo is the setting of the rotary stroke of the large rudder angle servo, which is disabled by default.

It is generally used in the setting of a large amount of servo such as a tank or a robot.



Instructions:

This function needs to be connected to the receiver before it can be set.

NOTICE

Enabling the large rudder angle may cause the servo to move beyond the rotation stroke and damage the servo. Therefore, before using this function, be sure to check if the servo is suitable for this function.

Linkage Setting

General Menu

Monitor

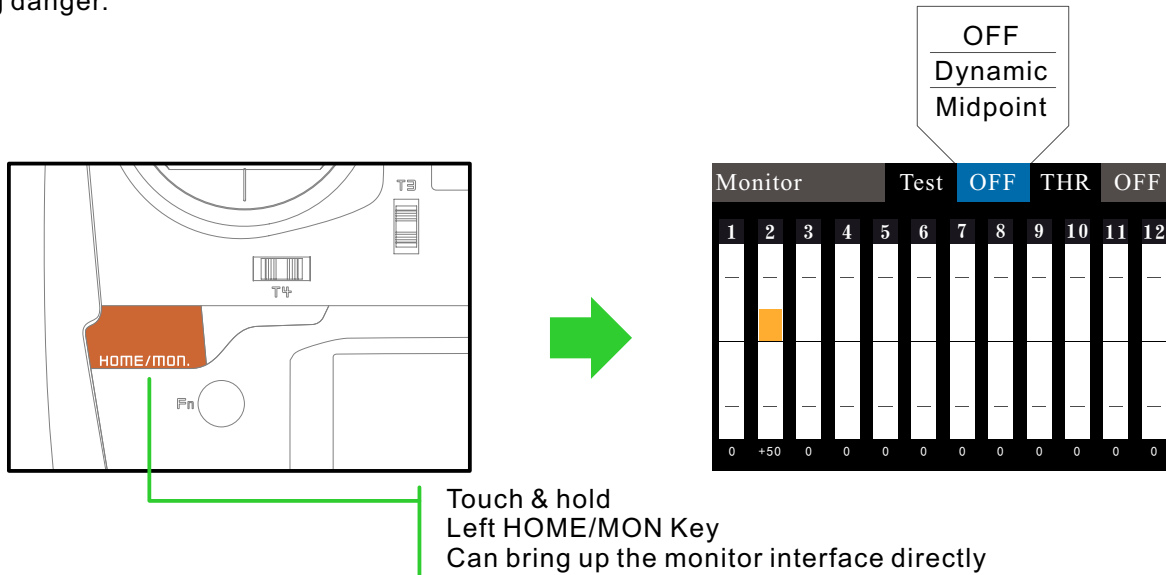
Interface path: WFLY → [General Menu] → [Monitor]

This interface can be used to understand the servo output of each channel and confirm the servo action. It can also perform the servo test, such as “stroke” and “Midpoint Test”.

Operating Mode:

- "Off": The default item displays the real-time output position of all current channels.
- "Midpoint" mode: All channels, the rudder opportunity is fixed at the midpoint stroke position.
- "Dynamic" mode: All channels, rudder opportunities repeatedly.

Throttle: The throttle channel is closed by default, avoiding the throttle channel action output in case of causing danger.



DANGER

Never use the servo test mode when the motor is connected or the engine is in the start state. (It is very dangerous to cause the propeller or rotor to rotate.)

WARNING

In dynamic mode, each rudder moves at an angle set by the rudder angle, so do not perform this test while connected to the body. (It may cause damage to the servo or connector or even the body.)

Monitor Application:

- 1 Servo action (channel) output real-time dynamic viewing.
- 2 Test of the end and midpoint of the servo stroke.

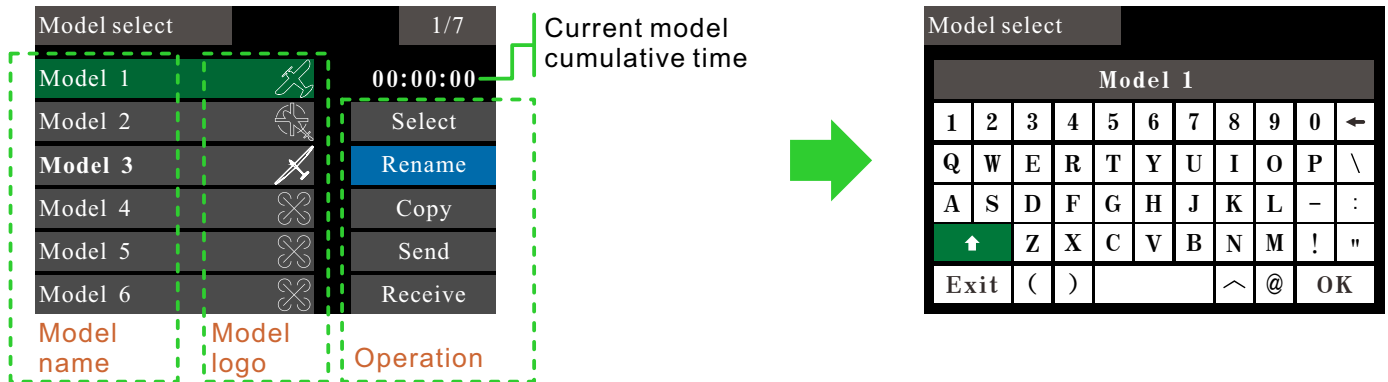
Servo test function:

- 1 Midpoint mode: All channels (servo) are at the neutral point, and the midpoint of the servo of each channel can be fine-tuned, thereby fine-tuning the model.
- 2 Dynamic mode: All channels (servo) are cycled back and forth between the two ends, and the stroke adjustment is made, so that it is possible to adjust whether the magnitude of the motion of the servo of each channel is suitable for the model.

Model Select

Interface path: WFLY → [General Menu] → [Model Select]

The ET12 can store 30 sets of model data and can flexibly edit the information of the processed data set.



Select: Select the model to run, click the “Select” button on the right, and the selected model on the left will turn into a green bottom frame, indicating that the model is successfully selected. The currently running model (the model indicated by the green box) will be displayed in the main interface.

Rename: You can rename the selection (the box flashes) The model name is nine characters long and only supports English naming. Model group.

Copy: The selected model copies (overwrites) the data of another model to back up the model data, or to quickly add and configure models that are not very different.

Send: Share the selected model data. The selected model data is sent to another ET12.

Receive: The location of the selected model to receive and store model data shared by another ET12.

* Sending and receiving operation distance should be within 0.5 meters.

Model selection example (Switch to the model that needs to be operated):

The selected model becomes a blue bottom frame. Click the “OK” button of the five-way button or touch the screen to directly click on the model, the selected model flashes, and the right operation option pops up.

Pay attention to the model group name when copying the model to avoid erroneous operations.

The operation of transmitting the model data by the No. 1 remote controller and receiving the model data by the No. 2 remote controller:

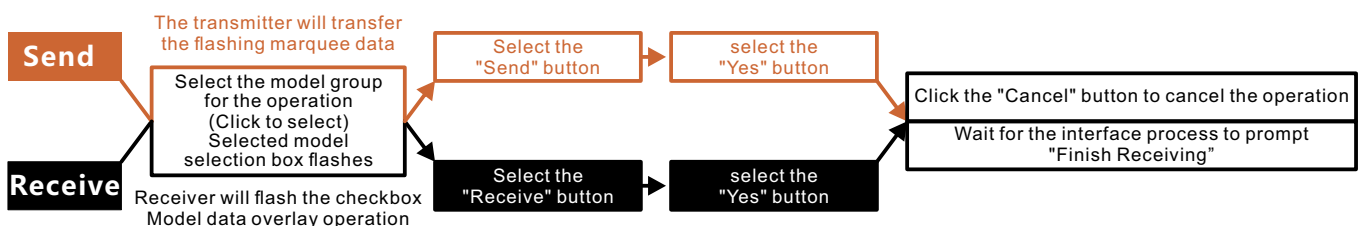
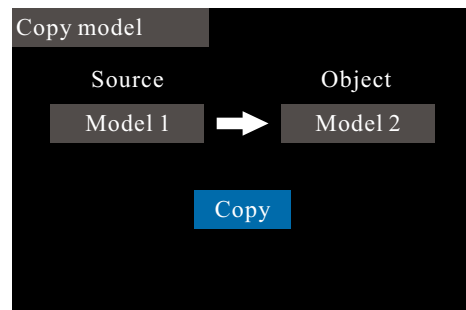
1 No. 1 remote control: Click to select the model group data to be shared (such as “Model 1”), select the “Send” button displayed on the right interface, click to select “Yes” in the pop-up window, and the model group data is waiting to be received. .

2 No.2 remote control: firstly select the saved model group position, select an unset model in the left model list and click, the right interface displays the “receive” button, click, and the prompt pop-up window selects “yes”. The second remote control starts receiving model group data.

NOTICE

The “copy” function, the target model data is covered by the reference model data. Please confirm that the target model data is no longer needed and then do the copy operation.

*Example of model sending function
(Requires two remote controllers of the same version):



Model Type

Interface path: WFLY → [General Menu] → [Model Type]

Airplanes and gliders are available in 6 main wing types and three tail types. Helicopters can choose from six swash types. There is a default preset for each type of model data.

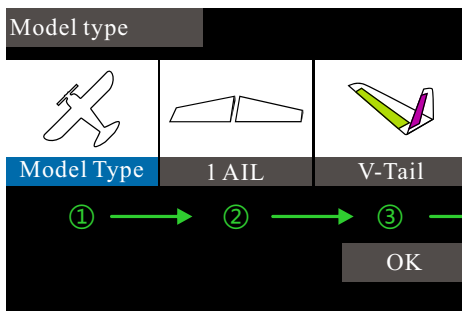
Model type: helicopter, airplane, glider, multicopter

Helicopter swash: H-1, H-3, HE3, HR3 (120°), HN3 (120°), H-4, H-4X.

Wing Types (Airplane, glider):

- Wing: 1 aileron, 2 ailerons, 2 ailerons + 1 flap, 2 ailerons + 2 flaps (normal, first page); 2 ailerons, 2 ailerons + 1 flap, 2 ailerons + 2 flaps (delta wing, second page)
- Tail: Normal, V-wing, aileron elevator (normal (normal, first page)); normal, winglet (delta wing, second page)

Save setting: After the type is selected, click the "OK" button in the lower right corner to save the settings.

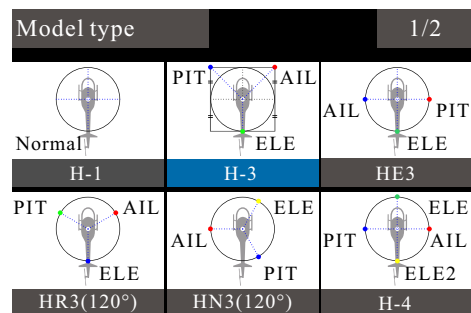
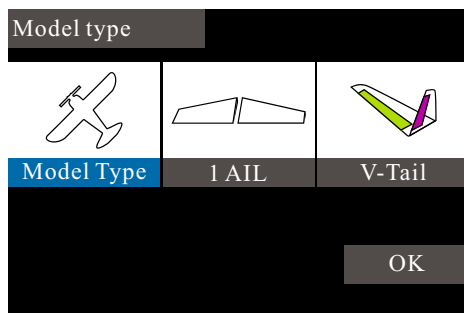


When the "Type Selection" is set, the type of "model" and "wing (swash)" are selected, and the selection interface will pop up in turn. If you click the title [Model Type] in the upper left corner, exit [Model Type], the settings do not save the changes.

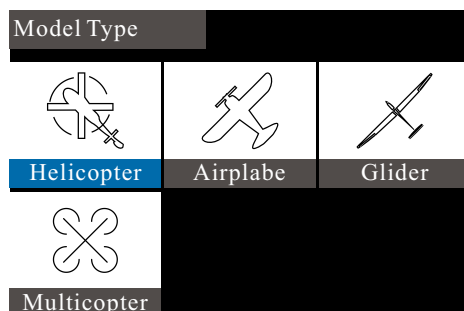
Example of operation: setting the model to helicopter (H-3)

1 Select (click) "Model Type" to pop up the model list.

3 Select (click) "H-3" to return to the default [Model Type] interface, and click the "Confirm" button to save the changes. Finish setting!



2 Select (click) "Helicopter" to bring up the swash list.



NOTICE

When the "Model Function" is replaced (the data in [Model menu] will be reset!!) Therefore, you must confirm that you do not need these data, or use the [Model select] function to "copy" the backup of the model data, and then do the replacement operation. Same as above, such as "swash plate", "wing type" and "tail type" operation, the corresponding operation will clear and change the current model data to the default parameters of the newly selected type, so it is necessary to reset the features of [Model menu] .

Function

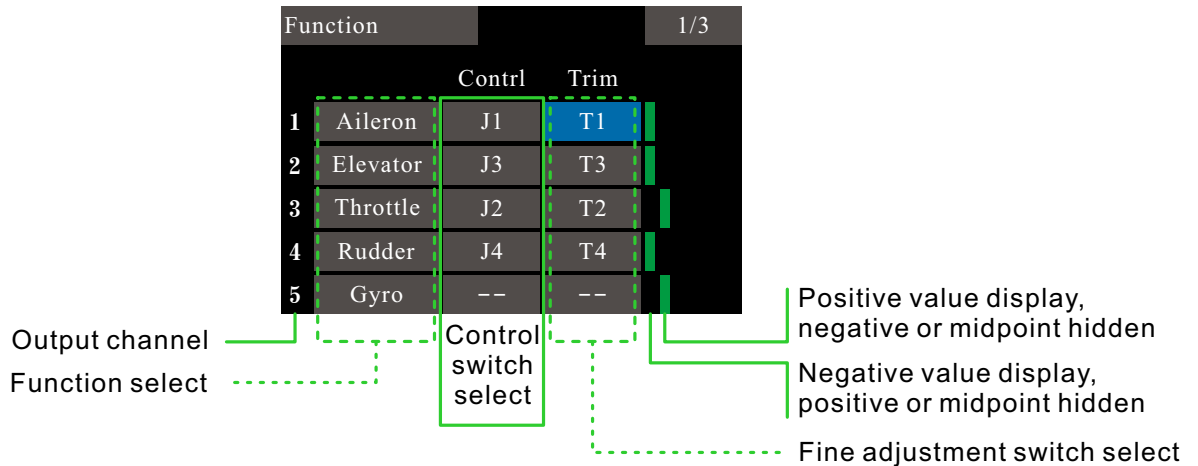
Interface path: WFLY → [General Menu] → [Function]

When selecting the model and wing type, the servo output channel and function combination has been preset. If necessary, you can change the servo output.

The combination of the road, functions (ailerons, elevators, etc.), control (stick J1-J4, switch SA-SH, trimming T1-T6, lever) and corresponding trimming can be customized.

Channel: When channel switching is used, the current channel will be replaced, and the replaced channel will automatically change the setting data (stroke adjustment, neutral point trimming, servo reverse, fail safe, etc.). (You can specify the same function to different servo output channels, such as assigning elevators)

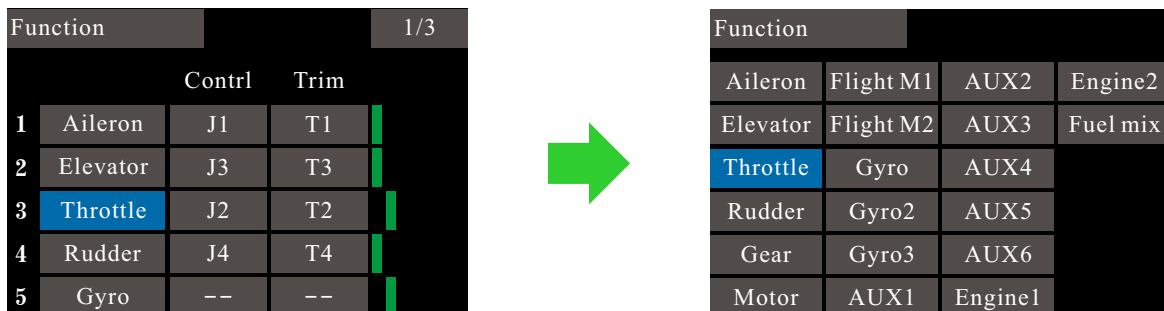
Go to channel 2 [CH2] and channel 3 [CH3].)



Example operation for assigning elevators to channel 2 [CH2] and channel 3 [CH3]

(The system default elevator is already the second channel. We can set the channel 3 throttle to the elevator.)

Click the button on the left side of the row as shown below. The channel function selection interface pops up. Click the elevator button to pop up the confirmation window. Select "Yes" to save the settings.



NOTICE

After the [Function] function is adjusted, you may need to adjust the following parameters: [End Point],[Sub-trim], [Servo Reverse], [Fail Safe], etc.

Servo Reverse

Interface path: WFLY → [General Menu] → [Servo Reverse]

This function reverses the direction of motion of each channel servo.

For helicopters with a swash structure (HR-3, etc.), first use [Servo Reverse] to match the direction of the pitch servo, and then use the swash AFR function to set the direction of the ailerons and elevators.

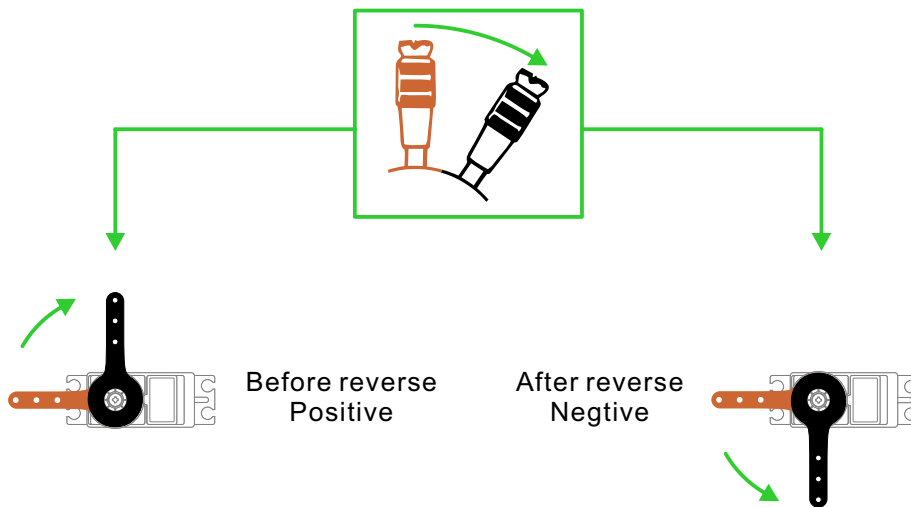
In some airplane/glider mixing settings, multiple servos control the same function. Whether to reverse the airplane or reverse the function setting is very complicated and difficult to distinguish. For specific functions, be sure to perform adequate physical inspection before flying.

Servo Reverse			
1 Aileron	Normal	7 AUX6	Normal
2 Elevator	Normal	8 AUX5	Normal
3 Throttle	Revers	9 AUX4	Normal
4 Rudder	Normal	10 AUX3	Normal
5 Gear	Normal	11 AUX2	Normal
6 AUX6	Normal	12 AUX1	Normal

Click the reverse operation

? Sure?

Yes No



WARNING

Before each flight, carefully check whether the system type, model type, steering action, direction of motion, and switch settings are correct or not.

DANGER

The throttle channel (3CH) is reversed at the initial setting. Please carefully check the throttle direction of the engine and motor, taking care not to suddenly turn on the power at full speed. When using an electric model, please do not care if the propeller or rotor is not installed. Identify the direction of movement of the electric and stick.

Connecting a propeller or a rotor can easily cause accidental rotation and lead to serious dangers such as injury.

Dual Rate

Interface path: WFLY → [General Menu] → [Dual Rate]

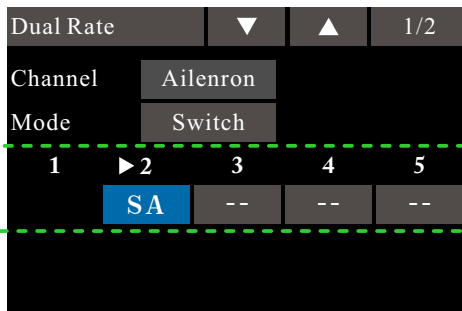
The function can set the rudder angle end point and action curve of CH1-CH12 channel, which can be adjusted separately for each condition. This function is usually used after setting the servo stroke. When mixing is applied from one channel to another, both channels can use the [Dual Rate] function to change the operating ratio.

Channel: CH1-CH12 channels can be set (each channel can support 5 ratios and support separate switch control)

Mode: Flight conditions, switch, Two control modes. The "Flight Condition" mode is controlled by the [Condition] function setting switch.



Dual Rate			
1	Aileron	7	AUX6
2	Elevator	8	AUX5
3	Throttle	9	AUX4
4	Rudder	10	AUX3
5	Gear	11	AUX2
6	AUX6	12	AUX1



Curves 1, 2, 3, 4, and 5: The curve control switch can be freely distributed, and the effective priority level is the optimal level with large numbers (5 is preferred).

1: Default curve, valid when other switches are not activated. Can be set when other numbering curve control switches are not activated.

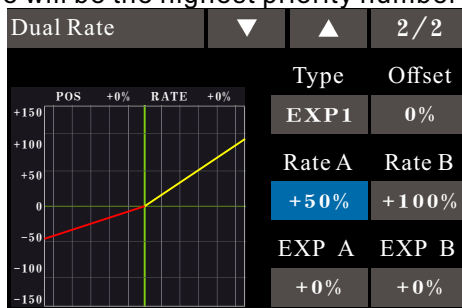
Example of curve setting for the corresponding switch (setting the curve of the switch of 2):

1 Assign control switch: Click the button below 2 to pop up the [Switch Assignment] interface, select the control switch and select the active position (such as the 2 position of the switch SA), click the "Dual Rate" button in the upper left corner to return to the [Dual Rate] interface.

2 Enable the curve: the switch SA hits the 2-position activation curve and the curve activation indicates that the arrow moves to the position number 2.

3 Edit curve: Switch to the curve setting interface on the second page to adjust the curve. After the adjustment, the curve associated with SA is set.

When the curve is set, the switch associated with other number needs to be deactivated, otherwise the set curve will be the highest priority number curve that is activated.



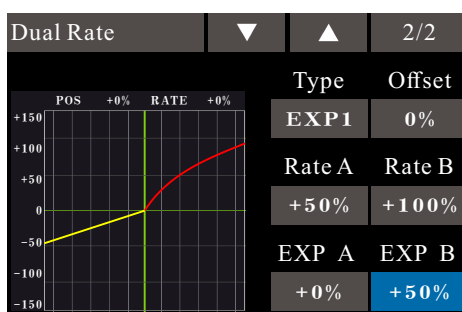
Curve: There are 3 curves (EXP1 , EXP2 , polyline).

Offset: The motion curve can be moved up and down. Change the neutral position.

Rate: The amount of rudder angle can be adjusted for rudder angle.

EXP: Exponential curve, setting of the action curve. When the negative value is near the neutral, it is slow, and when it is positive, it is close to the parameter near the neutral.

The corresponding curve is changed to red.



End Point

Interface path: WFLY → [General Menu] → [End Point]

This function can adjust the end point on the left and right sides of the servo respectively, for correction on the machine body connection.

The end point on the left and right sides can be 30%-155% (CH1-CH12), and the default value is 100%.

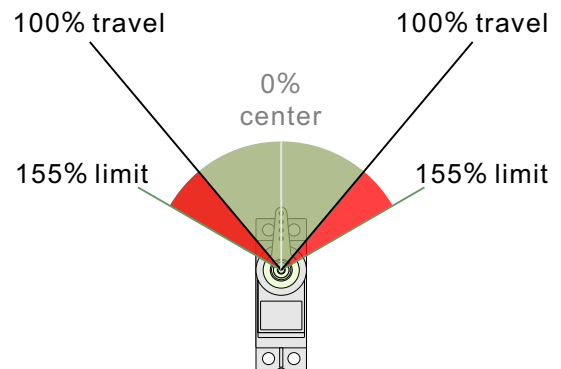
The maximum end point limit can be set between 0% and 155% with a default value of 135%.

After setting this limit point, even if the operation such as mixing control increases the steering stroke amount, the action of the servo will not exceed the limit point, thus locking the servo and protecting the connection.

The actual rotation of each channel servo is displayed on the interface. The display of the neutral position is based on the setting value of "Sub Trim". Therefore, the adjustment of "Sub Trim" will affect the upper and lower limit points of the servo position.

End Point	▼	▲	1/3
	Limit	Travel	Travel
1 Aileron	135%	100%	100%
2 Elevator	135%	100%	100%
3 Throttle	90%	100%	100%
4 Rudder	135%	100%	100%
5 Gyro	135%	100%	100%

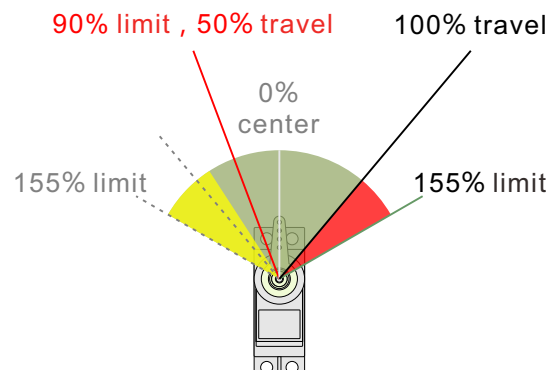
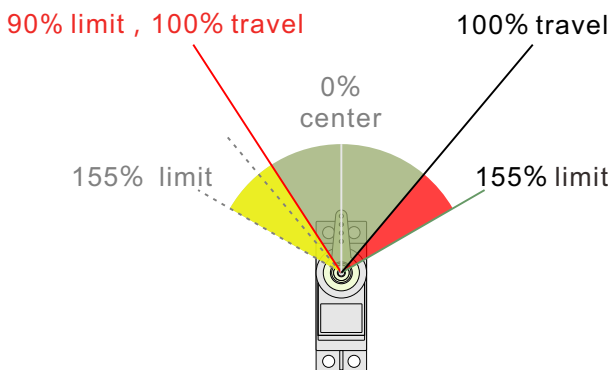
Left limit Left travel Right travel Right limit



Example of operation (upper right picture shows maximum limit and default travel):

1 As shown in the chart above, the left limit of the throttle has been set to 90%. The throttle stick we hit the maximum position, as shown below. Although the stroke is still 100%, the maximum limit (red line position) output is limited to 90%.

2 The left limit of the throttle is still 90%, and the stroke is changed to 50%. The throttle stick we hit the maximum position, as shown below. Although the limit is 90%, the throttle's output travel is limited to 50%, so the output maximum position can only reach half of the normal travel (red line mark).



Timer

Interface path: WFLY → [General Menu] → [Timer]

This timer function can be used for a variety of timings such as the total flight duration and the specific time of the game. Timer 1 and Timer 2 can be set and displayed on the main standby screen.

The timer is an independent function in each model. When the model is changed, the timer corresponding to the new model will be automatically recalled.

The timer can be started or stopped by operations such as switches or joysticks. And the direction of the start and stop switches can be set automatically. Positive timing and countdown can be set to a maximum of 99 minutes and 59 seconds.

Click to switch To timer 2

Click to start timing
Click again to pause
Press & hold to reset

After some time, start the timer reminder once every 1 minute. Remaining time, the remaining time of the distance alarm reduced every 1 minute. Reminder every minute, ring for 1 minute.

Minute:0-99

UP: starting from 0, increasing with time
Down: decrease from the set time

Mode UP Reset SW --

Vibrator INH Start SW --

Memory INH Stop SW --

INH, turn off the power or replace the new model and reset the timer to zero clearing.
ACT, Memory of the previous timing data while rebooting.

Seconds:0-59

Reset, start, close, it can be operated by switches and the like.

Click to start timing
Click again to pause
Press & hold to reset

Timer 2

Timer 1

Standby interface

Case Setting (timer 1 15 minute countdown, ringing alarm, open vibration, switch SA control):

1 Time setting, as shown on the right, warning bar, the left minute value is adjusted to "15", and the right side is set to "Remaining time"

2 Mode setting, mode is set to "countdown".

3 Vibration setting, vibration is set to "Vibration 1".

4 Memory setting, open as needed, keep the default here.

5 Switch setting, the start switch is set to "SA/2 gear", the stop switch is set to "SA/1 gear", and the reset switch is set to "SA/0 gear". (So we can control the timer 1 with just one switch)

After the activation and activation effect: the timing starts, the reminder becomes a continuous "tick-tick-tick..." sound when the remaining 20 seconds, and the reminder becomes continuous "ticktick-ticktick-tick" when 10 seconds left. The sound of "tick...", at the end of the countdown, there will be a long beep with the vibration of the type "Vibration 1"; then the timing will continue and show a negative value.

Timer

Model time 00:00.0

Mode Power on

Model time:the accumulated time of model working,the account unit is hour-miunte-second.
Control mode:boot timer, or switch/stick(such as throttle stick)

Timer

Timer1 00:00.0

Alarm 15 00 Elapsed

Mode Down Reset SW SA

Vibrator Vibrat1 Start SW SA

Memory ACT Stop SW SA

Trim Setting

Interface path: WFLY → [General Menu] → [Trim Setting]

In this function, you can set the amount of digital trim and the action mode, and you can select the trim step movement under each condition, or trim the individual movement under each condition. (For example, hover and stunt can be trimmed separately.)

Step: Adjustable travel 1-250, the default step value is 40 (the amount of motion change per trimming).

T1-T6

Link: For example, after T1 is linked, the channel assigned by the corresponding T1 will follow the action.

Switch: INH, 2 POS, 3 POS, the default "INH", control the corresponding trimming dynamic display of the main interface. Inhibit, the main interface hides the corresponding trim switch. 2, 3 POS, the main interface display corresponding trimming switch.

Condition: Group, single, default "group". Group modes: The same trimming data is reflected in all flight conditions. Single mode: Individual trimming adjustments are possible under each condition.

For example: applied to a powerless remote control glider.

VL, VR

Mode: Normal, P&T, and Knob are optional. Press the key twice to make the output value automatically return to the middle (the servo to the middle). Normal, it will automatically return to the middle after release. P&T will not automatically return to the middle. Knob, the leftmost minimum, and the rightmost maximum (reverse setting is default).

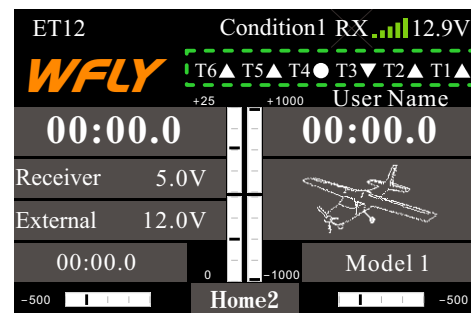
Trim Setting	▼	▲	1/2
	Step	Link	Switch Condition
T1	40	ON	INH Group
T2	40	ON	INH Group
T3	40	ON	INH Group
T4	40	ON	INH Group
T5	40	ON	INH Group

Trimming status display



Trim Setting	▼	▲	3/3
	Step	Mode	
VL	40	Normal	
VR	40	P&T	
CL-R	40		
CU-D	40		

Double click to make output value automatically return to the middle (the servo is back)



The trimming status prompt from the control home interface.

Sub-trim

Interface path: WFLY → [General Menu] → [Sub-trim]

This function is a function to trim the neutral position of each servo. In addition, the neutrality of the rudder surface can be trimmed while the connecting rod is connected.

When starting the [Sub-trim] setting, you must firstly sub trim each channel (checked by the monitor) to the center position.

Before adjusting [Sub-trim], be sure to adjust the control surface (servo) control link on the model firstly, and then use the [Sub-trim] function.

Sub-trim			
1 Aileron	0	7 AUX6	0
2 Elevator	0	8 AUX5	0
3 Throttle	0	9 AUX4	0
4 Rudder	0	10 AUX3	0
5 Gear	0	11 AUX2	0
6 AUX6	0	12 AUX1	0

Trave: -240~+240

Channel Delay

Interface path: WFLY → [General Menu] → [Channel delay]

This function is mainly used for realistic actions, such as retracting the undercarriage (reducing the response speed of the output channel), setting the stroke to 0 to 100, and the default is 0 (corresponding to the delay time of the channel stick position from one end to the other end is the set time).

The larger the value displayed on the interface, the larger the delay and the slower the output of the action.

Channel Delay		1/2
Status	INH	
Switch	--	
	Delay	Delay
1 Aileron	0	4 Rudder 0
2 Elevator	0	5 Gear 0
3 Throttle	0	6 AUX6 100

Customize any switch, knob, etc.
Used to enable and disable the delay function

Default, no delay

Maximum value, Maximum delay

Program Mixes

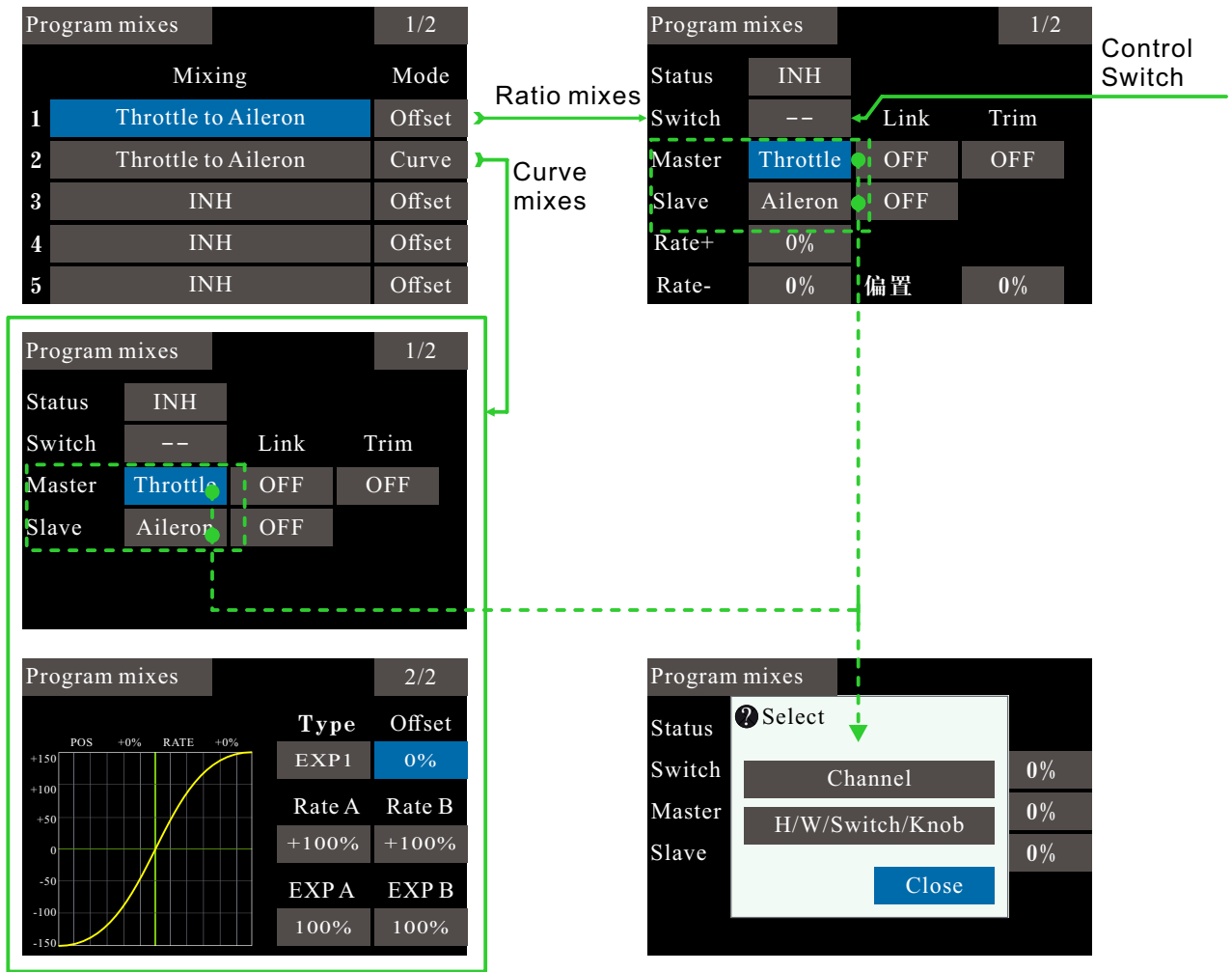
Interface path: WFLY → [General Menu] → [Program Mixes]

It can create 10 mixing combinations, which can be customized by selecting channels or switch knobs, and supports mixing of 3 curve types (EX1, EXP2, and polyline). In addition to being used to create a variety of aircraft flight characteristics, it can be used for a variety of other purposes.

The direction of the mixing ratio can be set separately.

Ratio mode: Ratio mixing for simple mixing with directional settings.

Curve mode: Curve mixing, precise control of mixing between different strokes, where "polyline" can be precisely adjusted using 5, 7, and 13 points.



The setting of the ratio programming mixes (refer to the above mixing 1):

1 Switch the mode to the ratio and click on the name of the mixed control 1 (the mixed control name is the name generated by the combination of the primary and secondary channels, such as the view from the throttle to the aileron), and enter the mixing configuration interface.

2 To use this programming mixes, you need to enable this feature, so the status needs to be switched to enabled. (When inhibit, the control switch cannot be activated when it hits the active position.)

3 Set the control switch, the default is [--], we can set it as switch, knob rocker and so on.

4 Assign the primary and secondary channels, and confirm the channel polarity by actual operation.

5 Set the mixing ratio. There are two ratios of

positive and negative, which can control the mixing ratio in both directions.

6 Set the offset ratio, which is used to set the up and down offset of the midpoint of the overall mixing position relationship.

The setting of the curve programming mixing control (refer to the above mixing control 2):

1 Switch the mode to the curve;

Status, Switch, Channel Assignment Reference "Settings for Ratio Programming Mix" (Step 234 described on the left)

5 Curve setting, here you can select three curves for more precise adjustment.

Flight Mode

Interface path: WFLY → [General Menu] → [Flight Mode]

This function can be combined by two arbitrary switches or knobs, rockers, etc. to form up to 9 different ratios of output. Each output user can set it according to actual needs, which is suitable for some flight control boards for various flight conditions. Demand for use.

For details, please refer to the instruction manual of the flight control board, and set the most reasonable operation mode according to the user's own usage habits.

Flight Mode 1		▼	▲	1/2
Status	INH	Mode1	1100us	
Switch 1	--	Mode2	1250us	
Switch 2	--	Mode3	1400us	
Mode7	1850us	Mode4	1550us	
Mode8	1850us	Mode5	1700us	
Mode9	1850us	Mode6	1850us	

Mode Description:

There are at least 4 mode outputs (two switches x two switches = four states).

There are up to 9 mode outputs (3rd switch x 3rd gear switch = 9 states).

The green label position is the active position of the current switch gear combination and does not affect the setting parameters.

WARNING

Please verify the setting result after setting. Please remove the blade when is commissioning verification, be careful to avoid injury to the model.

Double engine

Interface path: WFLY → [General Menu] → [Double Engine]

The output channels of Engine 1 and Engine 2 need to be set in the [General Menu] - [Function] menu.

When part of the model aircraft, ship model, and car model use two motors as the power drive, the dual engine function can be directly used, and the engine 1, the acceleration rocker and the steering stick of the engine 2, and the engine 1 and the engine 2 can be simply set. Mixing rate. In the robot model and the ship model, the bidirectional electronic governor ratio setting is supported, and the control direction can be quickly switched by setting a forward and reverse switch. Double engine function supports 3 rate settings, each rate supports separate control switches.

Double engine		▼	▲	1/4
Status	INH			
ESC mode	Unidir			
Switch	► 1	2	3	
Rate	50%		20%	

Function status button (INH, ACT, default [INH])

Unidir: one-way electronic governor such as empty mode (acceleration only supports setting forward)

Bidir: two-way electronic governor for ship model, car model, robot, etc. (Acceleration support settings forward and backward)

Switch: Supports 3 ratios and control switch settings. The priority ratio 3 is the highest.

Rate: equivalent to size action, supports switching of 3 different ratios.

Double engine		▼	▲	2/4
THR H/W	--			
Reverse	--		NOR	
	Engine1	Engine2		
Forward	0%		0%	
Backward	-100%		-100%	

Accelerate stick:

Control engine 1 and engine 2 rotate at the same speed to achieve forward or backward.

Positive and negative: Set the control switch for controlling the positive/negative

Forward: set the forward rate

Back: set the ratio of the back

Double engine		▼	▲	3/4
RUD H/W	--			
Reverse	--		NOR	
	Engine1	Engine2		
RUD(L)	+50%		+100%	
RUD(R)	+100%		+50%	

Direction stick:

Control engine 1, engine 2 rotates at a differential speed, Implement left or right turn.

Positive and negative: Set the control switch for controlling the positive/negative

Direction (left): Set the ratio of the left turn
Direction (right): set the ratio of right turn

Double engine		▼	▲	4/4
Engine hold	--			
Status	INH			
Switch	--			
Engine1	-152%			
Engine2	-152%			

Engine hold working status

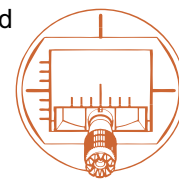
Hold function control switch assignment

Throttle hold position

The output of the default parameter

Accelerate stick

Forward



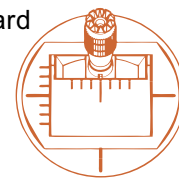
-100%

-100%

Engine1

Engine2

Backward (Dibir)



+100%

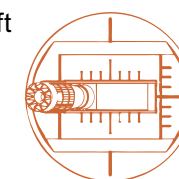
+100%

Engine1

Engine2

Derection stick(one way)

Turn left



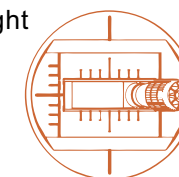
0%

-50%

Engine1

Engine2

Turn right



-50%

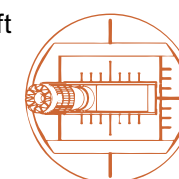
0%

Engine1

Engine2

Direction stick(Two way)

Turn left



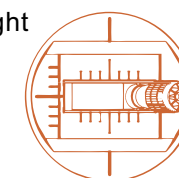
+100%

-100%

Engine1

Engine2

Turn right



-100%

+100%

Engine1

Engine2

Condition

Interface path: WFLY → [Model Menu] → [Condition]

With this function, flight conditions can be configured as needed, and there are 5 flight conditions to choose from.

If you do not need to use the conditional switching function, you do not have to set it on this page. The default configuration can be used directly.

When multiple flight conditions are set, the priority between them is to prioritize the final flight conditions!

Delay: Avoid swaying of the fuselage caused by sudden changes in the position of the servo or the unsynchronized action time between the passages when switching flight conditions.

Assign control switch: By default, there is no switch assignment (--), click to enter the assignment interface. Switching between flight conditions can be performed using switches such as a toggle switch, a stick, and a side lever. Set the unwanted flight condition switch to empty (--).

Rename: If condition needs to be modified, click on the name bar on the left to directly rename the operation. Press and hold the 5-way button to reset the default name.

Condition	
Normal	Delay
Idle 1	--
Idle 2	--
Idle 3	--
Hold	--

Delay configuration interface point

The delay value of each flight condition can be set separately. By activating the control switch set, the delay value of each channel corresponding to the flight condition can be set.

Condition		1/2	
Channel	Delay	Channel	Delay
1 Aileron	0	4 AUX6	0
2 Elevator	0	5 AUX5	0
3 Throttle	0	6 AUX4	0
4 Rudder	0	7 AUX3	0
3 Gear	0	8 AUX2	0

12 channels can be individually set to delay

Servo Reverse	
1 Aileron	Normal
2 Elevator	Normal
3 Throttle	Revers
4 Rudder	Normal
5 Gear	Normal
6 AUX6	Normal
7 AUX6	Normal
8 AUX5	Normal
9 AUX4	Normal
10 AUX3	Normal
11 AUX2	Normal
12 AUX1	Normal

Switch instruction

Condition	
Mode	Logic
SwitchA	Logic
SwitchB	And

Single mode (single switch control).

Logic mode (combination switch control).

"AND" mode: The flight conditions can be switched when both switches are turned on.

"OR" mode: As long as one switch is turned on, the flight conditions can be switched.

XOR mode: When the positions of the two switches are reversed, the flight conditions can be switched.

* "On", "Off": When the switch is selected, the selected position or location.

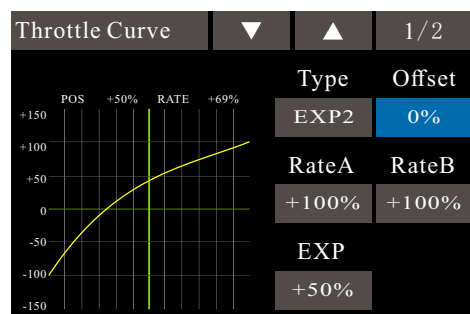
Throttle Curve

Interface path: WFLY → [Model Menu] → [Throttle Curve]

Through the 13-point curve, the throttle output curve is adjusted for the action of the throttle stick to achieve the optimal flight state of the engine (motor).

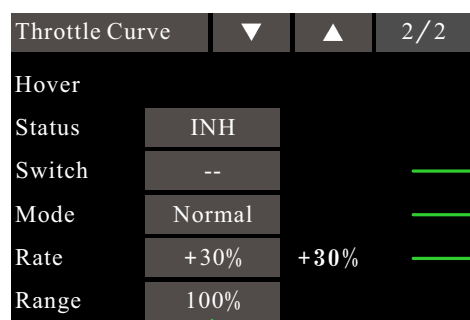
Mode: Midpoint mode, the operation near the midpoint of the fine adjustment can get the maximum change value; the normal mode is in the normal fine adjustment mode (parallel movement fine adjustment). The advantage of using the mode for fine-tuning is that there is no need to change the curve.

Switch/travel: Set the switch or fine-tuning, etc., and limit the maximum stroke range of the throttle through the set control switch during flight.



WARNING

When starting the engine, be sure to start the engine at normal idle speed in normal mode.



Select function control switch

Center, Normal, default [Normal]

The smaller the value, the closer the effective start range of trimming will be to the center.

0%~100%, default value 100%

Curve setting example

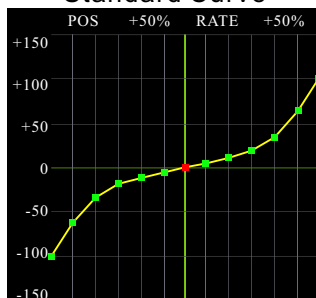
* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching by the switch, the function curve setting is performed separately.

The following curves are made in the default polyline adjustment. When the curve is actually set, it is input according to the specified (or reference value) action amount of the model.

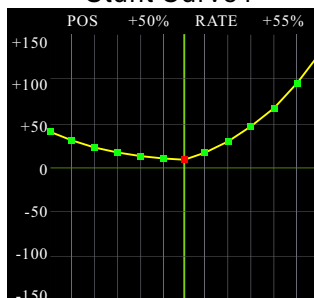
- Adjustment of the standard curve: The standard curve is a basic curve set with hovering as the center. With the pitch curve (standard), the number of engine revolutions is fixed, and the up and down control is the easiest.

- Adjustment of the stunt curve: The stunt curve is used to keep the engine at a certain speed even if the pitch is reduced during high altitude flight. For the purpose of movements such as tendons, roll, and 3D, special effects curves are sometimes used depending on the stunt action.

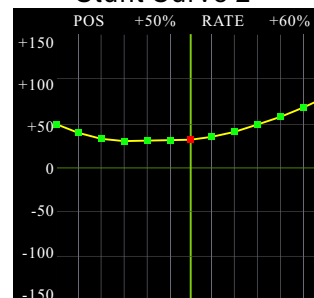
Standard Curve



Stunt Curve1



Stunt Curve 2



The hover throttle trim is a throttle trim function near the hover point. Usually used under hover conditions. The rotor rotation number will also change with changes in temperature, humidity, etc. The hover pitch curve can be trimmed for these changes, keeping the rotor rotation number in the most stable state. In addition, it can be used in combination with the hover pitch trimming function for finer trimming.

Pitch Curve

Interface path: WFLY → [Model Menu] → [Pitch Curve]

This function adjusts the pitch curve for each "flight condition" to get the best flight status following the throttle stick action.

Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching by the switch, the function curve setting is performed separately.

Mode: Midpoint mode, the operation near the midpoint of trimming can get the maximum change value; the normal mode is in the normal trimming mode (parallel movement trimming). The advantage of using the mode for trimming is that there is no need to change the curve.

Switch / stroke: set the switch or trimming, etc., during the flight through the set control switch to limit the maximum stroke range of the throttle.

Hover pitch trimming: is to trim the pitch near the hover point. Generally used in hover mode. Hover pitch can be based on rotor head speed, temperature, wet trimming to changes in degrees and other flight conditions. Trimming the hover pitch allows the rotor head speed to be more constant. This feature can be used with hover throttle trimming for a more detailed handling feel.

High/low pitch trimming : It is the trimming function of the pitch servo in the high position and low position.

WARNING

Start the engine. be sure to turn off the "idle" function switch and start the engine at idle down when flying.

Pitch Curve		▼	▲	3/3
Low pitch		High pitch		
Status	INH	Status	INH	
Switch	--	Switch	--	
Rate	+0%	Rate	+0%	
	+0%		+0%	

Pitch Curve	▼	▲	2/3
Hover			
Status	INH		
Switch	--		
Mode	Center		
Rate	+30%	+30%	
Range	100%		

Function control switch selection

Center, normal, default "Center"

The smaller number, the effective start range of trimming will be closer to the center

0%~100%, default value 100%

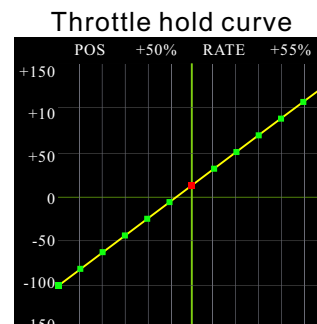
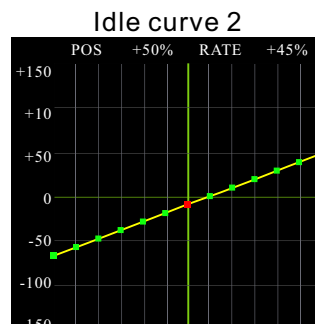
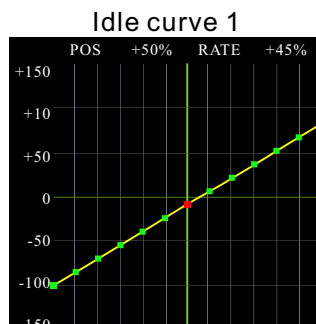
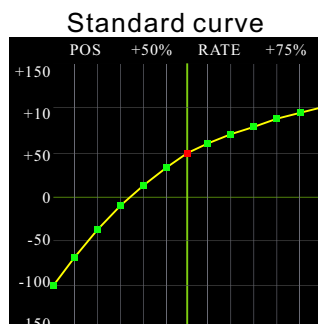
Curve setting example

The following curves are made in the default polyline adjustment. When the curve is actually set, it is input according to the specified (or reference value) action amount of the model.

Adjustment of the standard curve: Polyline is usually used. The standard curve is a basic curve set around the hover. With the throttle curve (standard), the number of engine revolutions is fixed, making the up and down control the easiest.

Adjustment of the stunt curve: The high pitch curve sets the maximum pitch that is not burdened by the engine. The low pitch curve is set for the purpose of matching the movement of the ribs, the roll, and the 3D. The stunt curve is sometimes used depending on the stunt action.

Adjustment of the throttle lock curve: The throttle lock curve is used for the descent landing process.



Throttle Hold

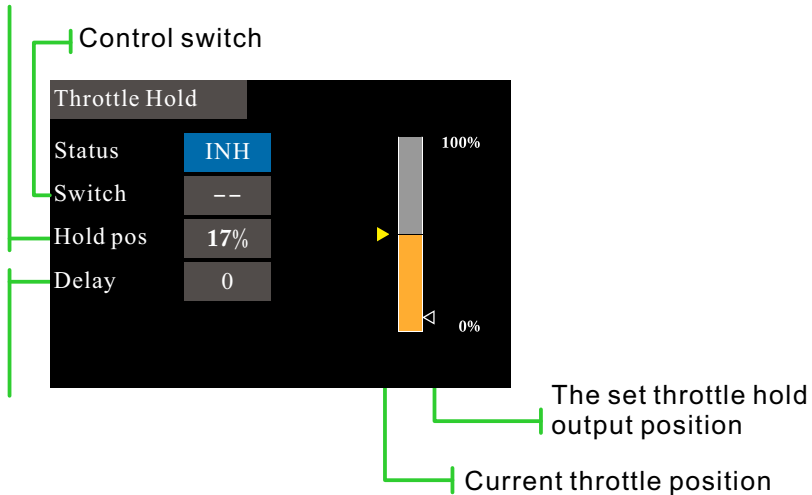
Interface path: WFLY → [Model Menu] → [Throttle Hold]

This function sets the throttle in the cut position during landing. The throttle servo speed can be adjusted.

Note: The throttle hold is associated with flight conditions and the throttle hold function must be set separately with different flight conditions.

Place the stick on the throttle position you want to hold with Range 0%-50% and Default 17% , press +/- button or click UP/DOWN button to adjust the value, or click the value button or the confirmation button to get the position(POS).

Set [Throttle hold] function switching response speed with Range 0-100, Default 0 , no conflict with [Condition] delay.



Function application instruction

When the helicopter is performing a landing action, the propeller is generally required to operate at low idle speed in order to land safely and smoothly.

However, the working principle of electric helicopters and oil-powered helicopters is different. The setting here needs to distinguish the "holding position" of the throttle according to the model power, and make adjustments according to the actual application.

The operation of the electric helicopter is more flexible than the oil engine, so it can be set low or closed (depending on the actual situation).

The engine of the oil-powered helicopter runs, and the acceleration and deceleration dynamic response time is much longer than that of the motor, so the "holding position" needs to be higher than the motor type.

WARNING

When flying, be sure to turn off the "stunt" function. The warning switch can be used to start the engine at idle down.

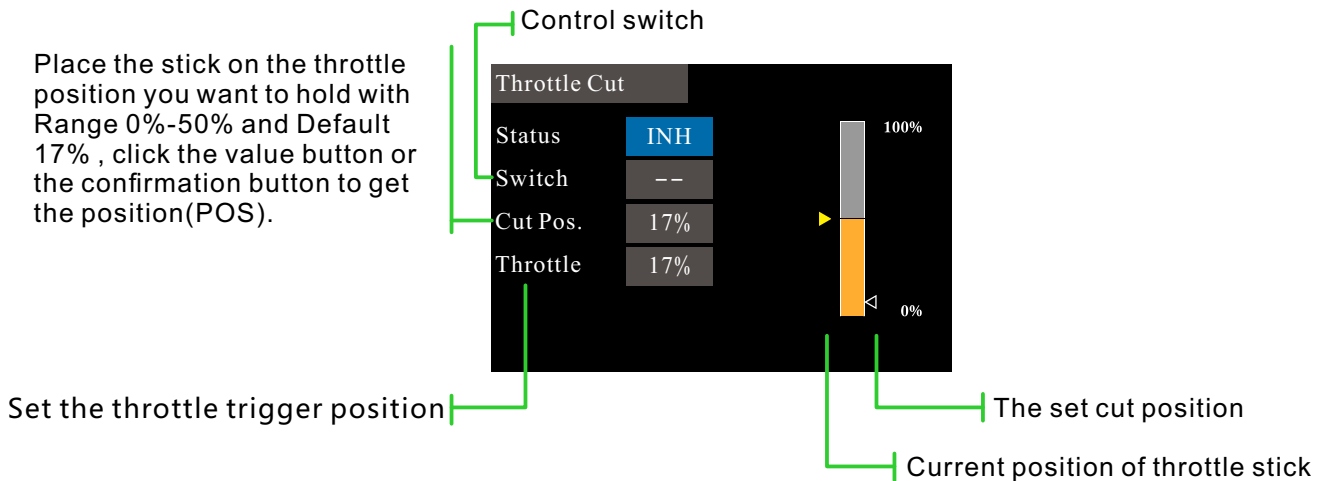
Throttle Cut

Interface path: WFLY → [Model Menu] → [Throttle Cut]

Safely and easily to turn off the engine. Throttle cut provides an easy way to stop the engine from running. Generally speaking, it can be realized by dialing a hardware switch in an idle state. This function cannot be triggered when the throttle is high to prevent any mis-operation. The position and direction of the switch must be selected because the initial setting is [--]

The selected hardware cut switch adjusts the ratio value when the throttle and throttle lever are idle down, until the engine can be completely shut down.

In addition, verify that the throttle link is not tightened or that the servo is not overloaded.



Cut position setting

- 1 Status is switched to "ACT"
- 2 Click the "Switch" button to pop up the "Switch Assignment" interface and select the control switch.
- 3 Turn on the selected "cut control switch", the engine stick is in the idle down state, adjust the rate until the engine (motor) stops completely.

Please pay attention to the throttle connection here, do not let the servo exceed the travel.

DANGER

The "cut position" must not be set higher than the lowest speed throttle position. It is dangerous if the engine runs at high speed.

Gyro

Interface path: WFLY → [Model Menu] → [Gyro]

This function is used to adjust the gyroscope sensitivity. Set the sensitivity and mode of operation (normal/AVCS) for each flight condition or switch.

Generally, when only the normal AVCS(lock tail) application is applied, it is only necessary to set a set of gyroscopes.

Gyro		1/2
Gyro	Gyro1	<p>3 channels can be set separately, Gyro\ Gyro 2\ Gyro 3.</p> <p>The control gyro sensitivity can be activated by "Flight Condition" or by assigning switches, knobs, and so on.</p> <p>The five "Flight Condition" can set the gyroscope sensitivity separately.</p>
Mode	Condition	
Position	Normal	
Status	INH	
Type	AVCS	

Condition mode

Gyro		1/2
Gyro	Gyro1	<p>Each control switch can set the gyroscope sensitivity separately, and can set five kinds of sensitivity.</p> <p>The sensitivity value of the specified position of the activation switch can be controlled by customizing switches, knobs, etc.</p> <p>Inhibit and enable the current Gyro configuration group</p> <p>Normal mode, (AVCS) lock tail mode</p>
Mode	Switch	
Position	1	
Switch	--	
Status	INH	
Type	AVCS	

Switch mode

Gyro		▼	▲	2/2
Rate	AVCS100%			<p>Gyro operation mode. Normal, AVCS100%</p> <p>Set the associated tuning control switch, knob, etc. for sensitivity adjustment</p> <p>Control switch current real-time position</p> <p>Can set the tuning range value $\pm 20\%$</p>
Tuning	--			
	+0%		+0%	

Function setting

1 When using the function, first assign the function channel on the [Function] interface, and set the "Switch" and "Tuning" to [--] in [Function].

2 Mode selecting. Optional "switch" or "Flight condition".

3 Position selecting. In each mode, there are 5 groups of positions to choose from, and the corresponding sensitivity can be set separately. In the "switch" mode, you need to select the position switch, the default is [--].

4 Status selecting. Select whether the "Position" configuration above is enabled or not.

5 Type selecting. Select the sensitivity type of the corresponding work for the current "position".

6 Ratio adjustment. The options vary depending on the type option ("Normal" type, "Rate" range 0%-100%; under "AVCS" type, "Rate" range is Normal[0~100%], AVCS[0~100%]) .

7 Tuning the switch selection and tuning the ratio setting. Sensitivity tuning switch, the default is [--]; the rate value can be set to $\pm 20\%$. Used for tuning the sensitivity.

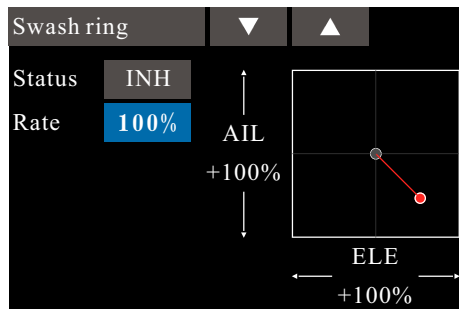
The sensitivity required for different flight modes is different, so switch the conditions (Position) separately for sensitivity adjustment.

Swash ring

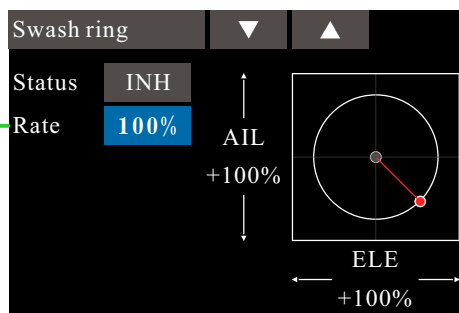
Interface path: WFLY → [Model Menu] → [Swash ring]

This function limits the travel of the swash to a certain range to prevent damage to the swash end point when operating the ailerons and elevators at the same time. The maximum output rudder angle position can be obtained, which is suitable for settings such as 3D flight.

When the swash ring function is activated, a circle indicating the area of the motion range is displayed (as shown below). The motion of the stick is limited to this range. The upper and lower directions of the motion range display area are the elevator operation amount, and the left and right direction is the aileron operation amount.



Adjust the swash activity range



Setup steps

- 1 The status is set to Enabled, and the right diagram shows the action limit range.
- 2 Adjust the ratio (adjustment range 50%-200%). The smaller the value, the smaller the range of motion. The larger the value, the larger the range of motion.

Swash mixing

Interface path: WFLY → [Model Menu] → [Swash Mixing]

The swash mixing is used to correct the swash movement in the aileron (rolling) direction and the elevator (helicopter head pitch) according to the specific operation under each flight condition.

Flight condition: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching is performed by switches, and function settings are made separately.

This feature allows individual adjustments to the rate of each set of ailerons, elevators and pitches.

Swash mixing		1/2	
Mixing	Status	Switch	Trim
AIL to ELE	INH	--	--
ELE to AIL	INH	--	--
PIT to AIL	INH	--	--
PIT to ELE	INH	--	--

Can be set to knob switch, etc., default [--]

When the mixing control switch is set to [--], the swash mixing only works under the selected flight conditions.

Mixing on and off options

Swash mixing		2/2	
Mixing	Rate1	Rate2	
AIL to ELE	+0%	+0%	
ELE to AIL	+0%	+0%	
PIT to AIL	+0%	+0%	
PIT to ELE	+0%	+0%	

The left mixing, default 0%, range -100%~+100%

The right mixing, default 0%, range -100%~+100%

Applications

- Example: Use the swash mixes function to correct the unintended movement trend of the roll direction.
- Use "Aileron to Elevator" mixing. Set this function "Enable" to adjust with the ratio. When the helicopter is raised to the right roll head, the value should be adjusted at "Rate 2", the right aileron moves, and the elevator deflects downward. Rolling to the left should adjust the value at "Rate 1"

Throttle mixing

Interface path: WFLY → [Model Menu] → [Throttle Mixing]

This function is used to correct the effect of the swash on the engine when operating the aileron or elevator. In addition, there is a certain correction effect on the torque of the left/right rotation when the spinning.

Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching by switch to perform function setting separately.

Throttle mixing
1 / 2

Mixing	Status	Switch	Mode
AIL to THR	INH	--	Center
ELE to THR	INH	--	Center
RUD to THR	INH	--	Center

Center trimming mode: Correct only near the center.
Linear trimming mode: Linear correction of the entire range.

When the mixing control switch is set to [--], the swash mixing only works under the selected flight conditions.

Mixing ACT and INH options.

Throttle mixing
2 / 2

Mixing	Rate 1	Rate 2
AIL to THR	+0%	+0%
ELE to THR	+0%	+0%
RUD to THR	+0%	+0%

Left mixing, default 0%,range -100%~+100%

Right mixing, default 0%,range -100%~+100%

Application example

Aileron to throttle: When the aileron is operated, the engine is corrected by the decrease in the number of load revolutions. The number of engine revolutions can be adjusted by setting the ratios 1 and 2 (left aileron, right aileron) independently.

After using [Throttle Mixes], the throttle servo will become larger. Therefore, set the limit for the servo end point (adjust in the [End Point] interface).

Idle Down

Interface path: WFLY → [Model Menu] → [Idle Down]

The idle down is usually used when landing. By operating a switch, the engine speed can be reduced.

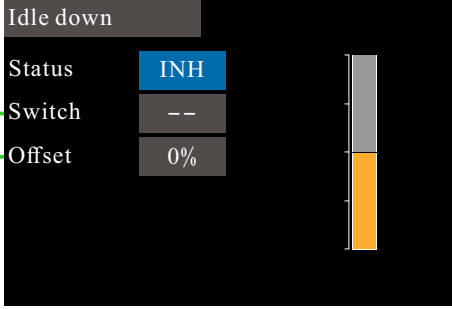
This feature is only available when the throttle position is low.

The initial setting of the switch is [--], so firstly set the control switch (and the position of the switch).

Function control, default [--]

The position of the throttle at "Idle Down".

Range:
High[-100%]Low[+100%]
Default 0%.



Setup steps

- 1 Click the status button to enable the [Idle Down] function.
- 2 Click the switch button to assign the function switch and set the function open position of the switch.
- 3 Turn on the selected[Idle Down] control switch.
- 4 The engine stick is in the idle state and the rate is adjusted until the engine reaches the minimum speed.

Please pay attention to the throttle connection here, do not let the servo exceed the stroke. (When set to a negative rate, shift to the throttle high direction.)

Governor

Interface path: WFLY → [Model Menu] → [Governor]

This function is used to switch the speed of the helicopter rotor head. The helicopter head speed can be switched by a hardware switch for each flight condition.

Condition mode

Switch mode

Governor		▼	▲
Mode	Condition		
Position	Normal		
Status	INH		
Rate	+50%		
Tuning	--		
	+50%	+20%	

The control governor can be activated by "Flight Condition" or by assigning switches, knobs, etc.

The "Flight Condition" can be set separately for the five "Flight Condition".

Speed adjustment. Ordinary, 100%.

Set the associated tuning control switch, knob, etc. to adjust.

Control switch current live position

The tuning range value can be set $\pm 20\%$.

Switch mode

Governor		1/2
Mode	Switch	
Position	1	
Status	OFF	
Rate	+50%	
Switch	--	

Each control switch can be set separately for the governor, and 5 positions can be set.

Disable and enable the current "Governor" configuration group.

Set the associated tuning control switch, knob, etc. to adjust.

Governor		2/2
Tuning	--	
	+0%	+20%

Function

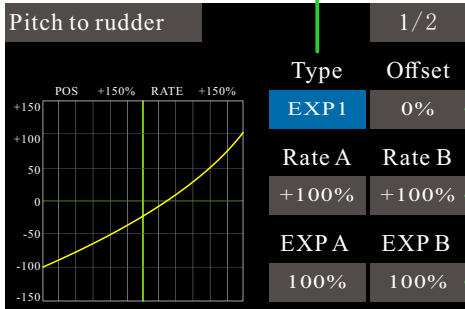
- 1 When using the function, firstly assign the function channel on the [Function] interface, and set the "Switch" and "tuning" to [--] in [Function].
- 2 Mode selection. Optional "switch" or "Flight Condition" mode.
- 3 Location selection. In each mode, there are 5 groups of positions to choose from, and the speed (rate) under the models can be set separately. In the switch mode, you need to select the position switch, the default is [--].
- 4 Status selection. Select whether the "Position" configuration above is enabled or not.
- 5 Ratio adjustment. Change the ratio and adjust the speed.
- 6 Tuning the switch selection and trimming the rate setting. Sensitivity tuning switch, the default is [--]; the rate value can be set to $\pm 20\%$. Used to tuning the speed. (When the tuning switch is [--], the preset tuning ratio speed correction is performed by default.)

Pitch to Rudder

Interface path: WFLY → [Model Menu] → [Pitch to Rudder]

This mixing can be used due to the change in the main paddle torque caused by the reduced pitch operation. Adjusting the direction of the rudder keeps the nose from moving. If the gyro has a correction operation function, it is not necessary to use the mixing function. If the mixing is used when the gyroscope mode is the lock tail [AVCS], the gyroscope midpoint drifts.

Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching by switch to set the curve separately.



The screenshot shows the 'Pitch to rudder' menu with a graph on the left and control parameters on the right. The graph has a y-axis from -150 to +150 and an x-axis with labels POS, +150%, RATE, and +150%. A yellow curve is plotted. The control parameters are as follows:

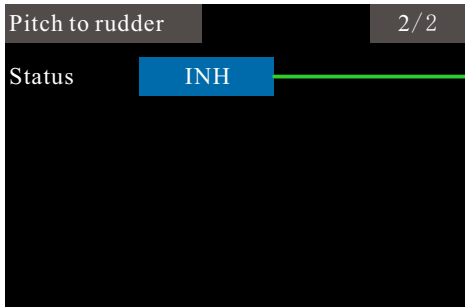
Type	Offset
EXP1	0%
Rate A	Rate B
+100%	+100%
EXP A	EXP B
100%	100%

Optional 3 curve

Up and down the overall offset curve, adjust the center point

Ratio on the left side of the curve and ratio on the right side, range

EXP left ratio and right ratio, range curve



The screenshot shows the 'Pitch to rudder' menu with the 'Status' section highlighted. The 'INH' button is visible.

Disable and enable the [Pitch to Rudder] function

Hovering mode curve mixing

The mixing rate curve starts with a small initial value. For clockwise rotation of the rotor head, the mixing is set in a clockwise direction when the pitch is operated in the positive direction. Firstly, trimming during hover and then adjust the neutral position.

1 Adjustment between low speed and hover.

Repeat hover between takeoff and landing at a constant rate that matches your own rhythm. Adjust the curve so that the nose does not move as the throttle increases and decreases.

2 High throttle (can climb from hover and diving).

Climb and sneak from hover at a constant rate that suits your habits. Adjust the pitch so that the nose does not move as the throttle increases or decreases.

Stunt mode mixing curve adjustment

Set the mixing ratio so that the aircraft flying at high speeds is guaranteed straight ahead under the control of the rudder. Adjustments can be made for the flight conditions of each application.

Fuel Mix

Interface path: WFLY → [Model Menu] → [Fuel Mix]

The function is used to improve the mix control of engine needle adjust and control carburetor during flying.

Engine cut setting

This function is connected to the [Throttle Hold] function, the [Throttle Cut] function, and the [Idle Down] function. Adjust the throttle cut position according to the specific situation. Set to the fully closed position.

Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching is performed by switches, and function settings are made separately.

Fuel mixes	▼	▲	1/3
Status	INH		[Fuel Mix] Disabled, Enable
Mode	UNMIX		Mixing mode, non mixing mode
THR cut	17%		Throttle cut controlling position, range 0~50%, default 17%
Hold pos.	17%		Throttle lock controlling position, range 0~50%, default 17%
Tuning	--	+0%	+0%

Current control switch position

0 Trim ratio, range $\pm 30\%$, default 0%

[Fuel Mixe] trimming controlling switch of current flight condition

Accelerate adjustment setting

This function is used to adjust the acceleration performance of the engine/oil needle. The operation of temporarily increasing the oil needle while operating the throttle stick accelerates the engine. This function is used for excessive or low oil-to-air mixing ratios caused by sudden throttle stick operation. (When using the acceleration adjustment setting function, since the oil needle adjustment range is large, adjust the setting so that there is no dead zone in the entire connection travel.)

Fuel mixes	▼	▲	2/3
	Low	High	
Rate	0%	0%	High and low adjustment rate setting
Dumping	0%		Recovery time after adjustment operation
Act pos.	25%	75%	100%

The current position value of the throttle stick

Range 51-100%, default 75%, click to get the throttle stick position

Range 0-50%, default 25%, click to get the throttle stick position

Fuel mixes	▼	▲	3/3
	Low	High	
Type	EXP1		Offset
Rate A	+100%		Rate B
EXP A	0%		EXP B

Optional 3 curves, EXP1, EXP2, polyline

Up and down the overall offset curve, adjust the center point

Ratio on the left side of the curve and ratio on the right side, range $\pm 200\%$

EXP's left curve ratio and right curve ratio, range $\pm 100\%$

Note: In the default setting, the [Fuel Mixes] function is not defined on any channel. Before using this feature, select an unused channel on the receiver and assign it to this mix function. Also, confirm that "Control Switch" and "Trim" are set to [--].

Swash

Interface path: WFLY → [Model Menu] → [Swash]

Swash link correction function (except swash H-1 mode)

Midpoint position: This Neutral Point Setting function sets the midpoint correction point for the connection if the servo rocker arm is offset by the midpoint when the connection is installed. In addition, this adjustment will only change the [Swash Setting function reference point, which will not affect the midpoint of other functions]

Swash travel: A function used to adjust the amount of movement of the ailerons, elevators, and pitch. (can reduce / increase / reverse)

Mixing rate: This compensation mixing is used to correct the control trend of the swash in all directions. It adjusts the swash with the corresponding compensation mix to correct the operation in all directions.

Connection compensation: used to correct the control trend of the swash pitch at low pitch and high pitch.

Speed compensation: used to cancel the reaction caused by the difference of each servo when the swash moves.

Swash travel And Neutral

Swash	▼	▲	1/4
Swash travel	100%		
Neutral			
Aileron	+50%		
Elevator	+50%		
Pitch	+50%		

Range ±100%, default 50%

Range ±100%, default 50%

Range ±100%, default 50%

Range 0~100%, default 50%, click for the throttle stick position

Mixing rate

Swash	▼	▲	2/4
PIT to AIL	100%	100%	
PIL to ELE	100%	100%	
AIL to PIT	100%	100%	
ELE to PIT	100%	100%	
ELE to AIL	100%	100%	

Mixing ratio of each direction, different types of swash is with different mixing types, range 0~120%, default 100%

Speed compensation and Linking compensation

Swash	▼	▲	3/4
Comp.	High		
Aileron	+100%	+100%	
Elevator	+100%	+100%	
Speed	0		

Connection compensation

Range ±100%, default 0%

Range ±100%, default 0%

Speed compensation

Swash

Neutral point setting process (setting the reference point of the correction function)

1. Adjust the stick arm of the servo to make the mid-point within 50% so that the mixing value is as small as possible.

2. Move the cursor to "midpoint position" and click to get (Not support button setting) to read the throttle stick position (rudder neutral point value).

After reading the mid-point value, use the other correction functions for subsequent settings.

Mixing ratio setting step

* Use HR3 as an example to describe the setting process of the mixing ratio. The specific mixing control applied in other swash modes is different, but the setup process is the same.

- Set the throttle stick to the preset midpoint position. Adjust the length of the connecting rod so that the swash can remain level at this point.

- Trimming is used to make minor adjustments.

- Adjust the pitch curve to a straight line and maximize the helicopter pitch.

- Adjust the ratio data that needs to be corrected.

1. Adjustment when operating the aileron

When adjusting the aileron stick to move left and right, there is no interference in the direction of the elevator or pitch.

2. Adjustment when operating the elevator

When the elevator stick is adjusted to move up and down, there is no interference in the aileron or pitch direction. Make * adjust the ratio of [Pitch to Aileron] and [Pitch to Elevator] so that when the throttle stick is idling and full speed, make sure the swash moves only in the horizontal position.

Connection compensation setting procedure

- The connection compensation setting is firstly performed, which is very important for the mixing ratio setting.

- The connection compensation function compensates for possible interference, reduces the interference of the aileron and the lifting or lifting and aileron ste, and ensures that the pitch can be reduced and the pitch can be improved.

1. Compensation when operating the aileron: Set the throttle to the idle position. Move the stick on rocker left and right, then adjust the aileron compensation value to ensure that the interference in the elevator or pitch direction is minimal.

* If the interference increases as the compensation value increases, adjust the compensation ratio to the "negative ratio".

2. Compensation when operating the elevator: Put the throttle stick to the lowest position. Move the elevator stick up and down. At this time, adjust the elevator compensation value to minimize the interference in the pitch direction.

Place the throttle stick in the highest position and compensate the ailerons and elevators as described in 1-2 above.

Speed compensation

places the throttle stick at the midpoint. Quickly operate the elevator rocker and adjust the speed compensation value to minimize interference in the pitch direction. Then adjust the speed parameter.

- Normal compensation cannot be performed when the connection is too tight or too loose. Please keep the connection in a moderate state to compensate.

- The corrected pitch angle will change. Therefore, after the correction setting is completed, set the pitch angle during actual flight.

Condition

Interface path: WFLY → [Model Menu] → [Condition]

With this function, flight conditions can be configured as needed, and there are 5 flight conditions to choose from.

If you do not need to use the conditional switching function, you do not have to set it on this page. The default configuration can be used directly.

When multiple flight conditions are set, the priority between them is to prioritize the final flight conditions!

Delay: Avoid swaying of the fuselage caused by sudden changes in the position of the servo or the unsynchronized action time between the passages when switching flight conditions.

Assign control switch: By default, there is no switch assignment (--), click to enter the assignment interface. Switching between flight conditions can be performed using switches such as a toggle switch, a stick, and a lever. Set the unwanted flight condition switch to empty (--).

Rename: Which condition needs to be modified, click on the name bar on the left to directly rename the operation. Press and hold the 5-way button to reset the default name.

Condition	
Condition1	
Condition2	--
Condition3	--
Condition4	--
Condition5	--

Delay configuration interface point

For each flight condition, the corresponding delay can be set separately, and the set control switch can be activated to set the delay value of each channel corresponding to the flight condition.

Condition		1/2
Channel	Delay	Channel Delay
1 Aileron	0	6 Aileron2 0
2 Elevator	0	7 Flap 0
3 Throttle	0	8 Flap2 0
4 Rudder	0	9 Camber 0
5 Eleva2	0	10 Gear 0

12 channels can be individually set to delay

Switch instruction

Condition	
Mode	
Logic	
Switch A Logic Switch B	
-- Or --	

Separate mode (single switch control).

Logic mode (combination switch control).

"AND" mode: The flight conditions can be switched when both switches are turned on.

"OR" mode: As long as one switch is turned on, the flight conditions can be switched.

XOR mode: When the positions of the two switches are reversed, the flight conditions can be switched.

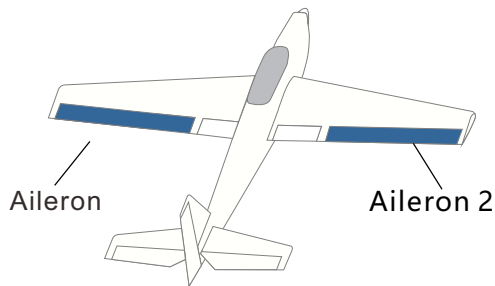
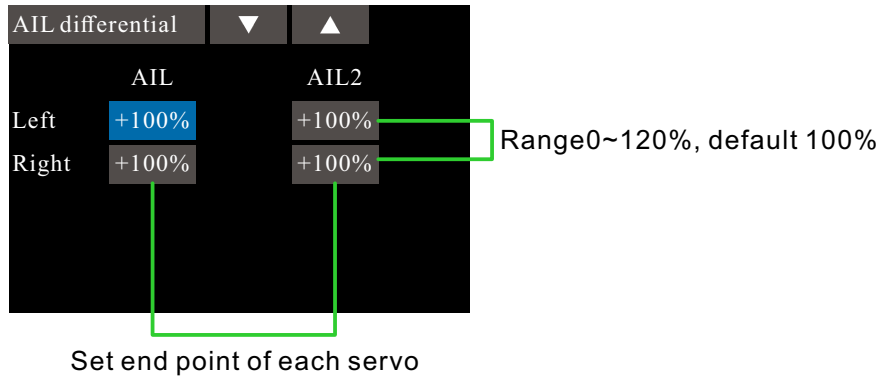
* "On", "Off": When the switch is selected, the selected gear position or position

AIL Differential

Interface path: WFLY → [Model Menu] → [AIL Differential]

When the ailerons are controlled by two servos, the ratio of the upper and lower rudder angles of the left and right ailerons can be independently adjusted.

*This function is only used on the two-wing models after the model is selected.



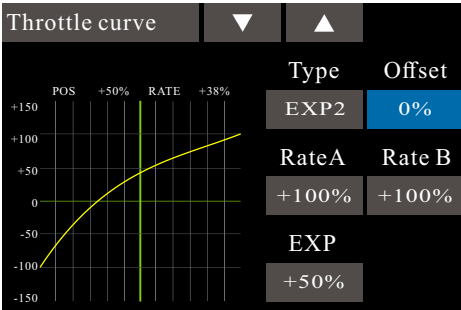
* Flight conditions: Set the "Flight Condition" control switch in [Model Function] → [Condition]. Switching is performed by switches, and function settings are made separately.

* When debugging, please operate the stick to the end point for maximum motion verification to avoid exceeding the range of the servo or the body.

Throttle Curve

Interface path: WFLY → [Model Menu] → [Throttle Curve]

This function adjusts the action curve of throttle channel to optimize the power of throttle stick input.



Setting instructions

The curve control switch for throttle lock needs to be set in [Model Menu] → [Throttle Hold].

Note: When starting the engine, be sure to start the engine at normal idle down in normal mode.

*Three curves can be set

* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching by switch to perform function setting separately.

Throttle Cut

Interface path: WFLY → [Model Menu] → [Throttle Cut]

Safely and easily to turn off the engine. Throttle cut provides an easy way to stop the engine from running. Generally speaking, it can be realized by dialing a hardware switch in an idle state. This function cannot be triggered when the throttle is high to prevent any mis-operation. The position and direction of the switch must be selected because the initial setting is [--]

The selected hardware cut switch adjusts the ratio value when the throttle and throttle lever are idle down, until the engine can be completely shut down.

In addition, verify that the throttle link is not tightened or that the servo is not overloaded.

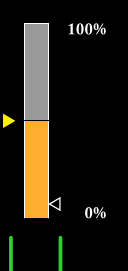
Function control, default [--]

Range 0%-50%, default 17%, click the value button or the confirmation button to get the position(POS.).

Set the throttle trigger position

Throttle Cut

Status	INH
Switch	--
Cut Pos.	17%
Throttle	17%



The set cut position

Current position of throttle stick

DANGER

The "cut position" must not be set higher than the lowest speed throttle position. It is dangerous if the engine runs at high speed.

Cut position setting

- 1 Status is switched to "ACT"
 - 2 Click the "Switch" button to pop up the "Switch Assignment" interface and select the control switch.
 - 3 Turn on the selected "cut control switch", the engine stick is in the idle down state, adjust the rate until the engine (motor) stops completely.
- Please pay attention to the throttle connection here, do not let the servo exceed the travel.

Throttle Hold

Interface path: WFLY → [Model Menu] → [Throttle Hold]

This function sets the throttle in the cut position during landing. The speed of the throttle servo can be adjusted.
Note: The throttle hold is associated with flight conditions and the throttle hold function must be set separately with different flight conditions.

Place the stick on the throttle position you want to hold with Range 0%~50%, default 17% , click the value button or the confirmation button to get the position(POS.).

Set the response speed of the [Throttle Hold] function switch with Range 0~100 and default 0, and there is no conflict with the [Condition] delay.

Control switch position

Throttle hold	
Status	INH
Switch	--
Hold pos.	17%
Delay	0

The set throttle lock output position

Current throttle position

Function application instruction

When the electronic helicopter is performing a landing action, the propeller is generally required to operate at low idle speed in order to land safely and smoothly.

However, the working principle of electric helicopters and oil-powered helicopters is different. The setting here needs to distinguish the "hold position" of the throttle according to the model power, and make adjustments according to the actual application.

The operation of the electric helicopter is more flexible than of the oil engine, so it can be set low or closed (depending on the actual situation).

The engine of the oil-powered helicopter runs, and the acceleration and deceleration dynamic response time is much longer than that of the motor, so the "hold position" needs to be higher than the motor type.

WARNING

When flying, be sure to turn off the "idle" function switch to start the engine at idle down.

Idle Down

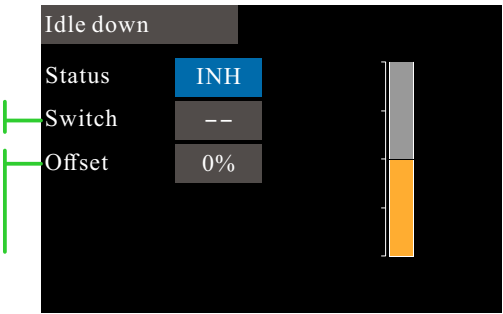
Interface path: WFLY → [Model Menu] → [Idle Down]

The idle down is usually used when landing. By operating a switch, the engine speed can be reduced. This feature is only available when the throttle position is low.

The initial setting of the switch is [--], so firstly set the control switch (and the position of the switch).

Function control switch, default [--]

The position of the throttle at "Idle Down"
Range:High[-100%], Low[+100%]
Default 0%



Setup steps

- 1 Click the status button to enable the [Idle Down] function.
- 2 Click the switch button to assign the function switch and set the function open position of the switch.
- 3 Turn on the selected[Idle Down] control switch.
- 4 The engine stick is in the idle state and the rate is adjusted until the engine reaches the minimum speed.

Please pay attention to the throttle connection here, do not let the servo exceed the stroke. (When set to a negative rate, shift to the throttle high direction.)

* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching is performed by switches, and function settings are made separately.

Aileron to Rudder

Interface path: WFLY → [Model Menu] → [Aileron to Rudder]

This function is required when mixing the rudder and ailerons. This feature allows the model to tilt to a steeper angle.

Winglet

Aileron to rudder		▼	▲
Status	INH		
Switch	--		
	Rudder		Rudder2
Left	+100%		+100%
Right	+100%		+100%

Functional status (disabled, enabled, default [disabled])

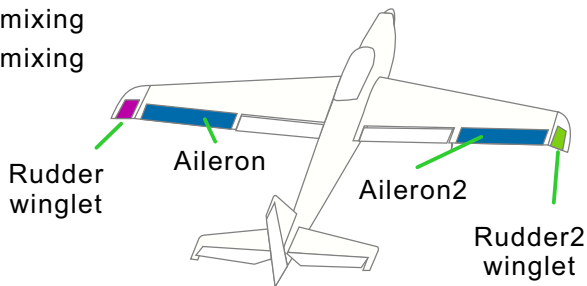
Function control switch (default [--])

Mix left side ratio, range $\pm 100\%$, default 0%

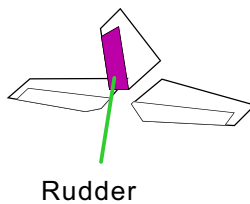
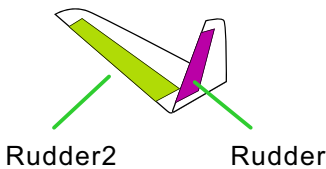
Mix right side ratio, range $\pm 100\%$, default 0%

Position 2 mixing

Position 1 mixing



Aileron to rudder		▼	▲
Status	INH		
Switch	SA		
	Rudder		
Left	+100%		
Right	+100%		



• This function can be used to control "on" / "off" with the switch during flight. (If you want to keep it on, set it to [--], you can also set it to [--], and the position is "On" to achieve the function normally open.)

• The mixing rate of this function can be adjusted.

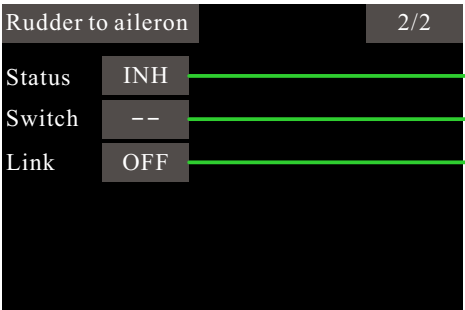
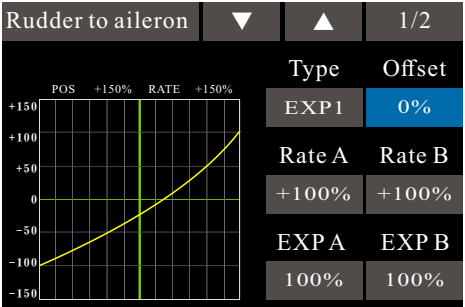
• Different types of wings will display different interface displays.

* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching is performed by switches, and function settings are made separately.

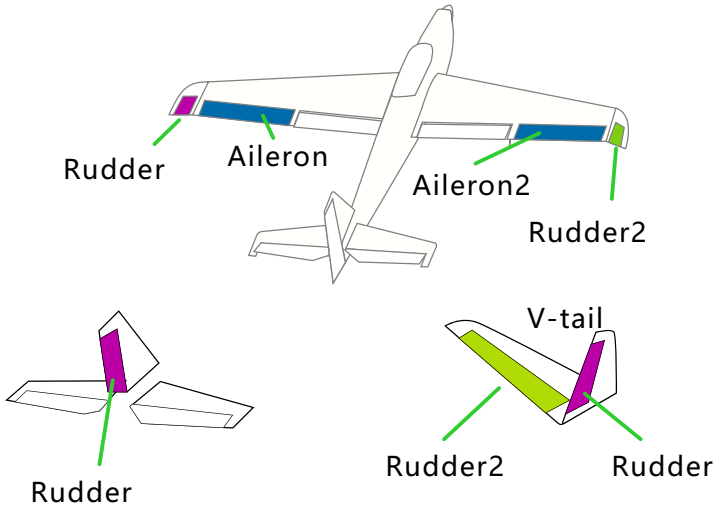
Rudder to Aileron

Interface path: WFLY → [Model Menu] → [Rudder to Aileron]

This function is required when mixing ailerons and rudders. This function is used when the rudder is used for roll, such as side flying. Can also be applied to tilting or turning in a real machine, large model or full size model



- Function status button(INH, ON, default [INH])
- Function control switch (default [--])
- Connect this mix to other mixes (default [off])



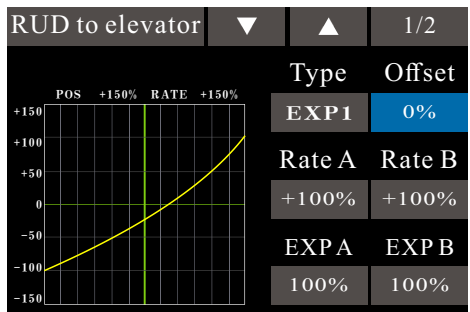
- This function can be used to control "on" / "off" with the switch during flight. (If you want to keep it on, set it to [--], you can also set it to [--], and the position is "On" to achieve the function normally open.)
- Setp function: It can connect this mix to other mixes.
- The mixing rate of this function can be adjusted.
- Three types of curves can be set.

* Flight conditions: Set the "Flight Conditio" control switch in [Model Menu] → [Condition]. Switching by switch to perform function setting separately.

Rudder to Elevator

Interface path: WFLY → [Model Menu] → [RUD to elevator]

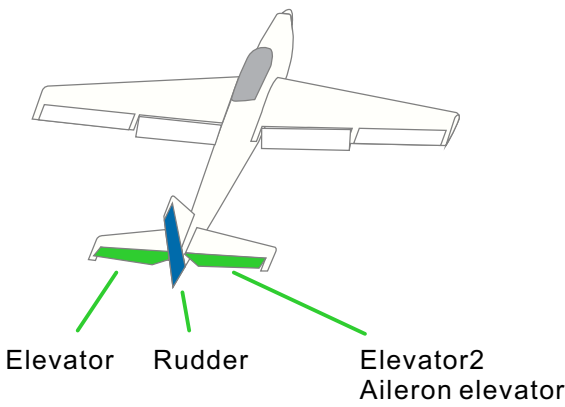
This function is used to mix the elevator and rudder operation. Used to correct unexpected movement trends when the rudder is used in a flight such as a roll or side fly.



The screenshot shows the 'RUD to elevator' function settings, page 2/2. It has a table with three rows:

Status	INH
Switch	--
Link	OFF

- Function status switch (INH, ON, default [INH])
- Function control switch (default [--])
- Connect this mix to other mixes (default [off])

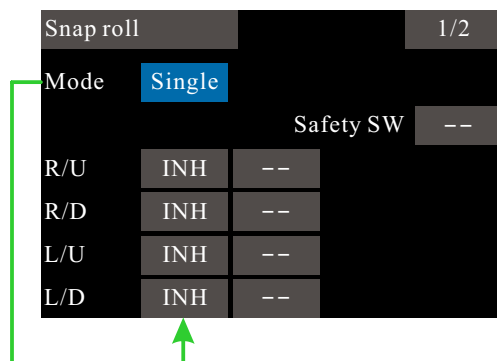


- This function can be used to control "on" / "off" with the switch during flight. (If you want to keep it on, set it to [--], you can also set it to [--], and the position is "On" to achieve the function normally open.)
 - Step function: It can connect this mix to other mixes.
 - Three types of curves can be set.
- * Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching is performed by switches, and function settings are made separately.

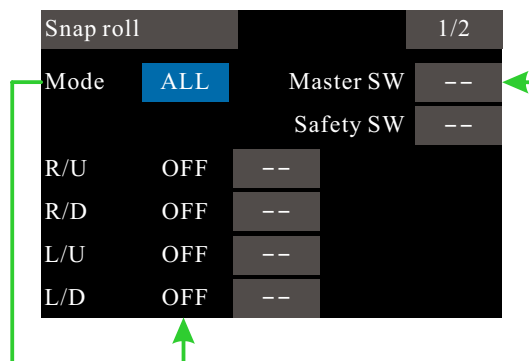
Snap Roll

Interface path: WFLY → [Model Menu] → [Snap roll]

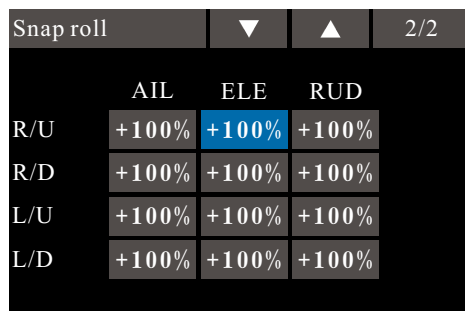
This function uses a selected control switch to perform fast cross-rolling and adjusts the ratio of ailerons, elevators and rudders.



Single Mode, Can independently set whether the control switch is enabled



Whole mode, All motion control switches are enabled by the "master" switch.



(Example) F3A setting example

1 Mode: all

2 Safety SW: [SG] (safety measures)

3 Master SW: [SH] (main switch to perform snap roll)

4 Direction switch: You can select the switch in the upper left, upper right, lower left, and lower right directions (when the switch is set, the switch direction is selected)

Top right: off, [SD] on-off-off

Bottom right: Off, [SD] Off-Off-On

Top left: off, [SA] on-off-off

Bottom left: off, [SA] off-off-on

5 Action ratio of aileron, lift, and direction: Turn on the corresponding switch to adjust the motion. (The switch action range is $\pm 150\%$ for each action, the default is 100% .)

•Operation mode:

When the [All] mode is selected, the snap roll function is performed by the main control switch [ON] / [Disable]. When the main switch [ON], 4 independent control switches can be used to perform snap roll in each direction.

When [Separate] mode is selected, when [On] is selected separately, 4 independent control switches can be used to perform fast roll in each direction.

• A safety switch can be set to prevent accidental triggering of nap roll. For example, when the nap roll is lowered, even if the snap roll switch is falsely triggered, the fast horizontal scrolling will not be performed. The snap roll switch can only be activated when the safety switch [OFF].

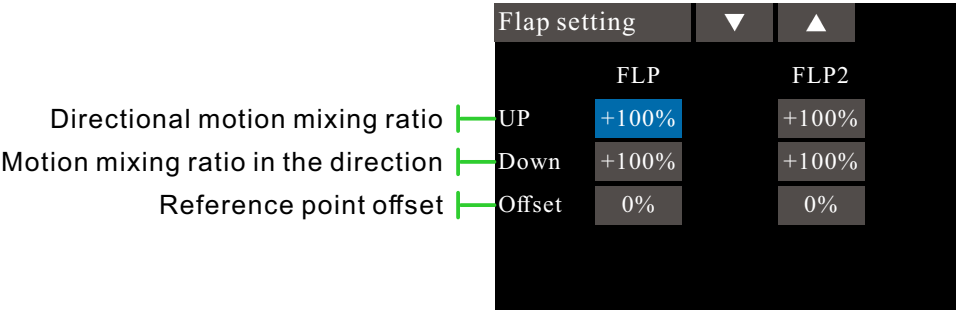
* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Conditios]. Switching by switch to perform function setting separately

Flap Setting

Interface path: WFLY → [Model Menu] → [Flap Setting]

Each flap's up and down motion stroke can be individually adjusted for each servo according to the type of wing.

* This function is only available for models with flaps.



Up and down action mixing ratio range ±120%, default 100%
Offset reference point range ± 100%, default 0%.

* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching by switch to perform function setting separately

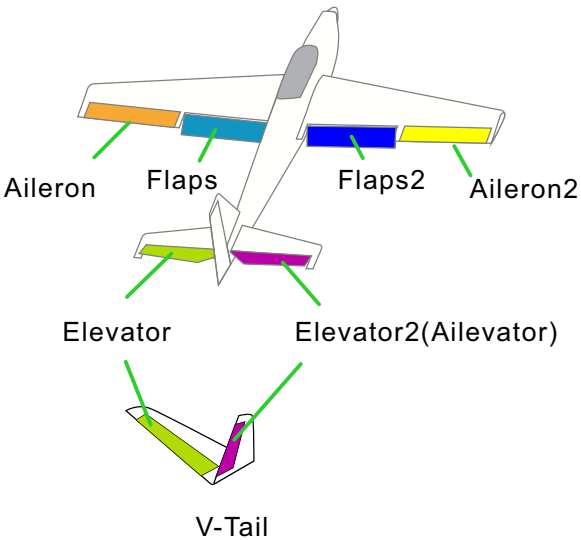
Camber Mix

Interface path: WFLY → [Model Menu] → [Camber mix]

This function is used to adjust the operating ratio on the positive and negative directions (ailerons, flaps) of the airfoil flaps. The ratio of the ailerons, flaps, and elevators can be individually adjusted to correct for changes in attitude caused by airfoil operations. The interface of different wing types will also be the same.

Camber mix		▼	▲
Status	INH		
Switch	--		
	AIL	AIL2	FLP
Rate1	+0%	+0%	+0%
Rate2	+0%	+0%	+0%

- Function switch (INH, ON, default [INH])
- Control switch assignment, default [--]
- Different aircraft types will have different wings
- Adjust in the positive and negative directions, range ±100%, default 0%



The up/down ratio of the ailerons, flaps, and elevators can be adjusted separately using curves. When the mechanical connection action of the fuselage is opposite to the mixing direction, the mixing polarity can be changed to adjust (+ or -).

This function can be switched "on" or "off" with the switch during flight. (If you want to keep it on, set it to [--], you can also set it to [--], and the position is "On" to achieve the function normally open.)

* Flight conditions: Set the "Flight Condition" control switch in [Model Function] → [Condition]. Switching is performed by switches, and function settings are made separately.

EIE to Camber

Interface path: WFLY → [Model Menu] → [EIE to Camber]

Use this function when you need to mix flap operation and elevator operation. When the mixing control is turned on, the elevator will be raised while the flap is lowered, which can increase the lift.

EIE to camber

▼▲

Status

INH

Switch

--

AIL

AIL2

Rate1

+100%

+100%

Rate2

+100%

+100%

Function status switch (INH, ON, default [INH])

Control switch assignment, default [--]

Different aircraft types are with different wings

Adjust in the positive and negative directions, range ±100%, default 0%

* The interface is different from the wings.

This function can be switched "on" or "off" with the switch during flight. (If you want to keep it on, set it to [--], you can also set it to [--], and the position is "On" to achieve the function normally open.)
When the mixing is activated, the elevator on the tailless wing is also affected.

* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching is performed by switches, and function settings are made separately.

Camber Flap to Elevator

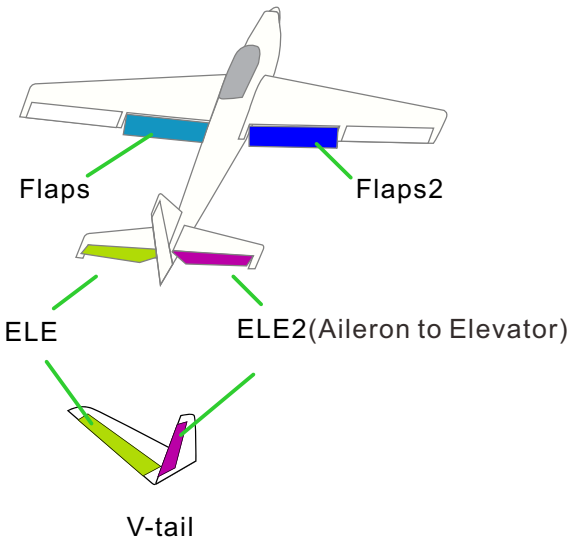
Interface path: WFLY → [Model Menu] → [Camber flap to ELE]

When using flaps, the pitch angle of the model has a tendency to change. This mixing compensates for the attitude change of the model by combining the inputs of the elevator.

The ratio of the upper and lower directions of the elevator can be adjusted. If the mixing direction is reversed due to a connection problem, you can also make adjustments by changing the polarity of the ratio.

Camber flap to ELE		▼	▲
Status	INH		
Switch	--		
	ELE		
Rate1	+0%		
Rate2	+0%		

- Function status switch (INH, ON, default [INH])
 - Control switch assignment, default [--]
 - Different aircraft types will have different wings
 - Adjust in positive and negative directions, range $\pm 120\%$, default 0%
- * Different types of interface on the wing type



In flight, this function can be switched on or off with the switch (set to [-] if it is always on, or [-], and the position is "on" to achieve the function normally on.)

* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition] to switch through the switches and perform function settings separately.

Aileron to Camber Flap

Interface path: WFLY → [Model Menu] → [Aileron to Camber Flap]

This mixing uses the aileron mode to operate the flaps. When the aileron stick is operated, both the aileron and the flap operate simultaneously in the aileron mode, which can improve the characteristics of the snap roll operation.

Aileron to Camber

▼▲

Status

INH

Switch

--

Link

OFF

Left

FLP

+0%

Right

FLP2

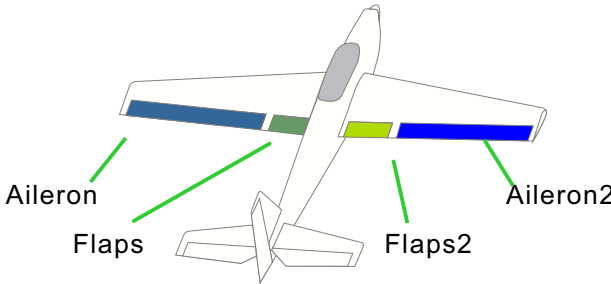
+0%

Function status button (INH, ON, default [INH])

Function control switch (default [--])

Connect this mix to other mixes (default [off])

Adjust in positive and negative directions, range ±120%, default 0%



By setting the switch, mixing can be turned on during flight. If you want to keep it on, set it to [--], you can also set it to [--], and the position is "On" to achieve the function normally open.
Step function: can connect this mix to other mixes.

* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition].
Switching is performed by switches, and function settings are made separately.

Airbreak

Interface path: WFLY → [Model Menu] → [Airbreak]

This function is used to increase the resistance of the model when diving or landing.

The preset elevator and flap offset values can be activated via the control switch. The offset rates of the ailerons, elevators, and flap servos can be adjusted as needed. It is also possible to adjust the speed of the ailerons, elevators and flap servos.

Function status button
(INH, ON, default [INH])

Function action switch (default [--])

Function control switch (default [--])

Airbreak	▼	▲	1/2
Status	INH		Delay
Switch	--	AIL	0
Safety SW	--	ELE	0
		FLP	0

Each channel can be individually set to delay

Different combinations of different models

Airbreak	▼	▲	2/2
	AIL	AIL2	ELE
Offset	0%	0%	0%
			RUD
Offset			0%

Offset direction adjustment
Range ±250%, default 0%

Example of F3A and other flap type settings (model type with 2 ailerons selected):
Status: [ACT]
Switch: [SC], off - on - off. (Assignment according to your own operating habits)
Automatic switch: [--] (SC activates the brake function immediately)
Delay: Each channel can adjust the offset ratio according to its own habits and the actual operation of the model:
Aileron:[-35~-45%]
Aileron 2:[-35~-45%]
Elevator:[+5~7%]

Notice: The values entered here are only examples. Please adjust the servo stroke according to the actual debugging effect of the model.

* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching by switch to perform function setting separately

Gyro

Interface path: WFLY → [Model Menu] → [Gyro]

This function is used to adjust the gyroscope sensitivity. Set the sensitivity and mode of operation (normal/AVCS) for each flight condition or switch.

Generally, when only the normal AVCS(lock tail) application is applied, it is only necessary to set a set of gyroscopes.

Condition mode

Gyro	Gyro 1
Mode	Condition
Position	Condition1
Status	INH
Type	AVCS

3 channels can be set separately, Gyro\Gyro2\Gyro3.

The control gyro sensitivity can be activated by "Flight Condition" or by assigning switches, knobs, and so on.

The five "Condition" can set the gyroscope sensitivity separately.

Switch mode

Gyro	Gyro 1
Mode	Switch
Position	1
Switch	--
Status	INH
Type	AVCS

Each control switch can set the gyroscope sensitivity separately, and can set five kinds of sensitivity.

The sensitivity value of the specified position of the activation switch can be controlled by customizing switches, knobs, etc.

Inhibit and enable the current Gyro configuration group

Normal mode, (AVCS) lock tail mode

Gyro	▼	▲	2/2
Rate	AVCS100%		
Tuning	--		
	+0%	+0%	

Gyro operation mode. Normal, AVCS100%

Set the associated tuning control switch, knob, etc. for sensitivity adjustment

Control switch current real-time position

Can set the tuning range value $\pm 20\%$

Function setting

1 When using the function, first assign the function channel on the [Function] interface, and set the "Switch" and "Tuning" to [--] in [Function].

2 Mode selecting. Optional "switch" or "Flight condition".

3 Position selecting. In each mode, there are 5 groups of positions to choose from, and the corresponding sensitivity can be set separately. In the "switch" mode, you need to select the position switch, the default is [--].

4 Status selecting. Select whether the "Position" configuration above is enabled or not.

5 Type selecting. Select the sensitivity type of the corresponding work for the current "position".

6 Ratio adjustment. The options vary depending on the type option ("Normal" type, "Rate" range 0%-100%; under "AVCS" type, "Rate" range is Normal[0~100%], AVCS[0~100%]).

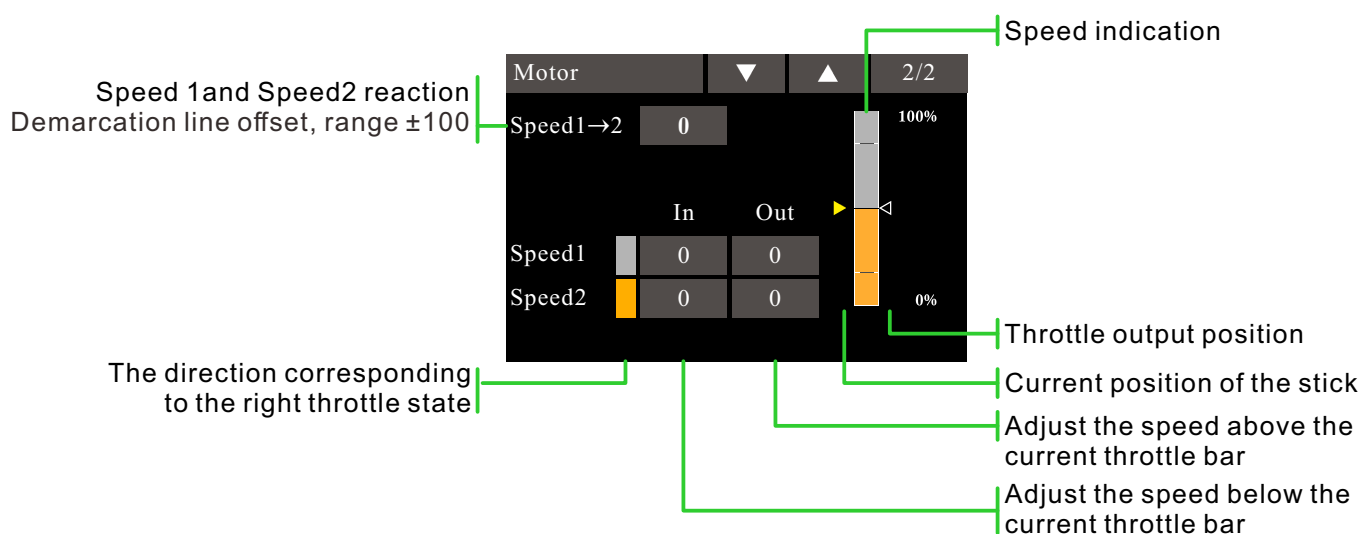
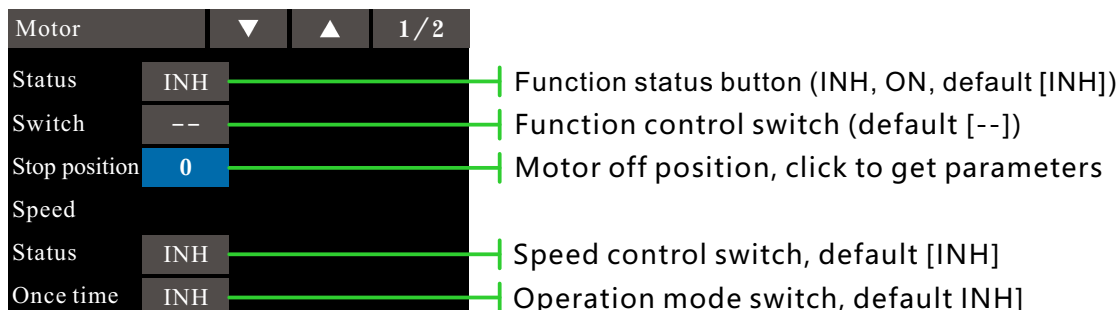
7 Tuning the switch selection and tuning the ratio setting. Sensitivity tuning switch, the default is [--]; the rate value can be set to $\pm 20\%$. Used for tuning the sensitivity.

The sensitivity required for different flight modes is different, so switch the conditions (Position) separately for sensitivity adjustment.

Motor

Interface path: WFLY → [Model Menu] → [Motor]

This function allows you to set the speed of the motor after the motor has been activated by a switch. Two ranges of operating speeds, slow flight and high speed flight (speed 1 / speed 2) can be set. This function can also be operated as a safety function by programming to a control switch.



*The speed here refers to the acceleration and deceleration speed (reaction speed) of the motor homing

-
- Set the motor control switch in [Function].
 - The input/output motion speed can be adjusted separately in both ranges (speed 1 / speed 2).
 - The boundary points of the two ranges can be moved (speed 1 → 2).
 - It can be set when the motion speed is set to only the first "input" direction operation. However, if the switch is turned off before the action is completed, it will still be valid for the next operation. To set this action again, simply set the "Speed" status switch and the "One Time Mode" switch to [INH] in the speed setting interface, and then set it to [Enable].
 - When setting or changing the control switch, you need to set or change it in the function setting [Function] page of the context menu. (Set in the control switch corresponding to [Motor].)

* Flight conditions: Set the "Flight Conditions" control switch in [Model Menu] → [Condition] to switch through the switches and perform function settings separately.

Notice:

- First determine the direction in which the motor is turned off, then set the speed. If you need to modify the direction of the closing, the servo speed must also be reset.
- It is recommended to set it with the [Fail Safel] function.
- The basic movement direction should be set with the ESC. Reverse function can be used.
- Be sure to set the position where the motor is turned off (stop position).

Fuel Mix

Interface path: WFLY → [Model Menu] → [Fuel Mix]

This function is used to improve the mixed control of engine needle control carburetor during flight.

Engine cut setting

This function is connected to the [Throttle hold] function, the [Throttle Cut] function, and the [Idle Down] function. Adjust the throttle cut position according to the specific situation. Set to the fully closed position.

Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching by switch to perform function setting separately.

Fuel Mix

▼▲1/3

Status

INH

INH, ON, default [INH]

Mode

UNMIX

Mixing mode, non-mixed mode (default)

THR Cut

17%

Throttle cut control position, range 0-50%, default 17%

Hold Pos.

17%

Throttle hold control position, range 0-50%, default 17%

Tuning

--

+0%

+0%

Current control switch position

Tuning ratio, range ±30%, default %0

[Fuel Mix] function tuning control switch for current flight conditions

Acceleration Adjustment Setting is used to adjust the acceleration performance of the engine/oil needle. The operation of temporarily increasing the oil needle while operating the throttle stick accelerates the engine. This function is used for excessive or low oil-to-air mixing ratios caused by sudden throttle stick operation. (When the acceleration adjustment setting function is used, since the oil needle adjustment range is large, the setting is adjusted so that there is no dead zone in the entire connection stroke).

Fuel Mix

▼▲2/3

Low

High

Rate

0%

0%

High and low adjustment rate setting

Dumping

0%

Recovery time after adjustment operation

Act pos.

25%

75%

100%

The current position value of the throttle stick

Range 51-100%, default 75%, click to get the throttle stick position

Range 0-50%, default 25%, Click to get the throttle stick position

Fuel Mix

▼▲3/3

Optional 3 curves, EXP1, EXP2, polyline

POS

+0%

RATE

+0%

Type

EXP1

Offset

0%

Move the curve up and down to adjust the center point

Rate A

Rate B

+100%

+100%

Ratio on the left side of the curve and ratio on the right side, range ±200%

EXPA

EXPB

0%

0%

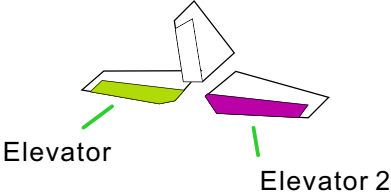
EXP's left curve ratio and right curve ratio, range ±100%

Note: In the default setting, the [Fuel Mix] function is not defined on any channel. Before using this feature, select an unused channel on the receiver and assign it to this mix function. Also, make sure the "Control Switch" and "Trim" are set to [--]

Elevator

Interface path: WFLY → [Model Menu] → [Elevator]

If the aileron type is selected in the model type selection function of the context menu and the aileron type is selected in the tail type, the elevator of the aileron elevator tail type can be adjusted in this setting interface. (Only for the body with one servo on each side of the elevator)
When operating the ailerons, let the elevator servo act as aileron to improve the performance of the rolling shaft.



Elevator		ELE		AIL	
		Down	Up	Left	Right
ELE	AIL5	+100%	+100%	0%	0%
RUD	AIL	+100%	+100%	0%	0%

Range±120%

Adjust the amount of movement of the elevator separately

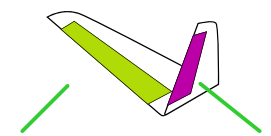
Adjust the amount of action of the aileron action on the elevator. (Set to 0 if only the 2 servos of the elevator are used instead of the ailerons)

- The amount of operation of each servo can be adjusted separately. (For the connection method of the servo, please refer to "Servo connection of different model categories")
 - When the connection causes the mixing direction to be reversed, it can be adjusted by changing the polarity (+/-) of the action amount.
 - If the amount of motion is too large or the rudder is repeatedly ruddered, the servo may be unresponsive. Be sure to confirm the actual movement of the body when setting.
- * Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching is performed by switches, and function settings are made separately.

V-Tail

Interface path: WFLY → [Model Menu] → [V-Tail]

If the tail type is "V-tail" which is selected from the model type selection of the context menu, the elevator and rudder of the V-tail can be adjusted in this interface. (The V-tail uses two servos to control the rudder at the same time. It is used as an elevator. In addition to the simultaneous lifting and lowering of each rudder surface (used as an elevator), the two rudder surfaces are used as rudders in the opposite direction. For the V-tail, This is also known as the direction elevator because they can be used for both the rudder and the elevator.)



Elevator (Rudder2) Rudder (Elevator2)

V-Tail		ELE		RUD	
		Down	Up	Left	Right
ELE	RUD2	+50%	+50%	+50%	+50%
RUD	ELE2	+50%	+50%	+50%	+50%

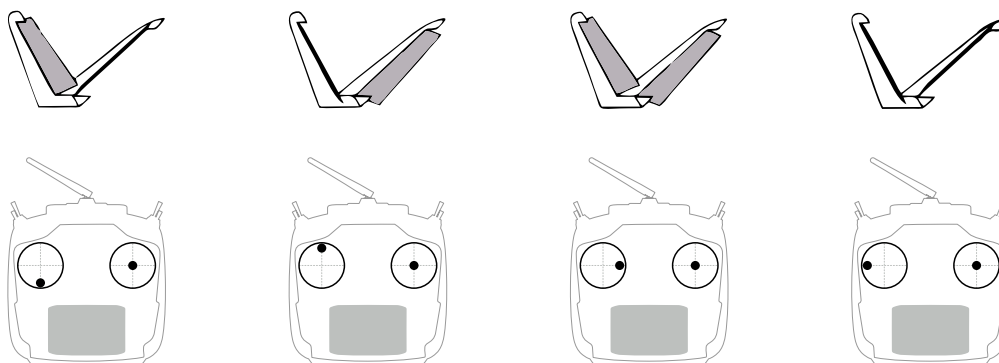
Range ±120%; Default 50%

Adjust the amount of the elevator Adjust the amount of the rudder

- The amount of operation of each servo can be adjusted separately. (For the connection method of the servo, please refer to "Servo connection of different model categories")
- When the connection causes the mixing direction to be reversed, it can be adjusted by changing the polarity (+/-) of the action amount.
- When the amount of action is too large or the rudder is repeated, the server may not respond. Please adjust before and after 50%. Be sure to confirm the actual movement of the body when setting.

* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching is performed by switches, and function settings are made separately.

Action output example:



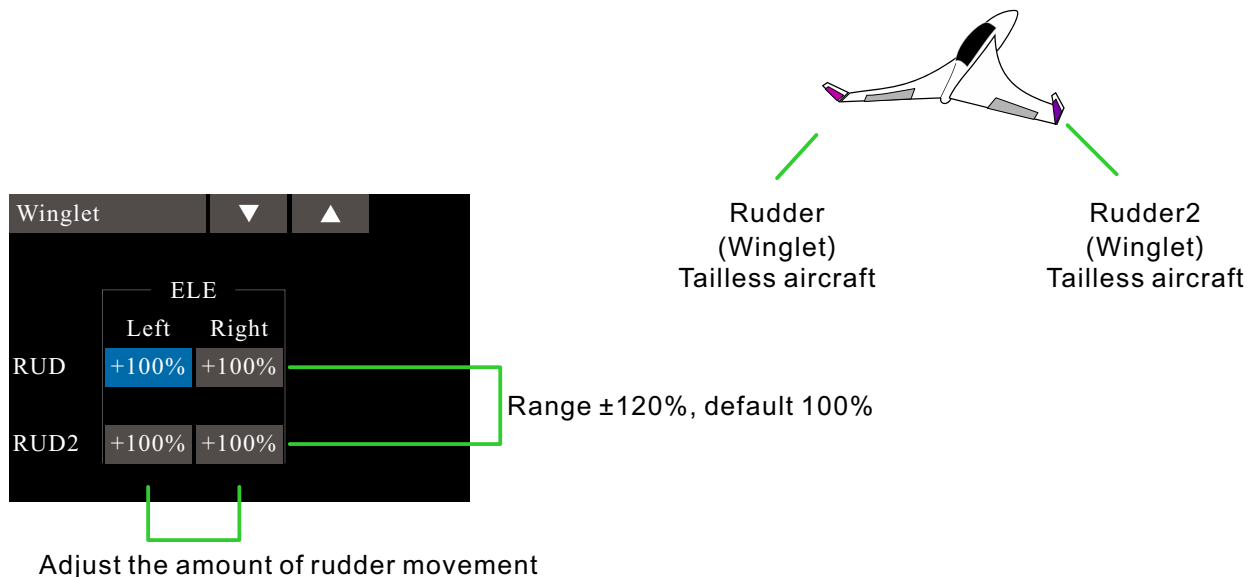
Winglet

Interface path: WFLY → [Model Menu] → [Winglet]

This function is used to adjust the left and right rudder of the model winglet. The winglet is used to reduce the induced drag caused by the wing tip vortex. (Winglets are vertical or angled extensions at the end of each wing.)

The winglets can significantly increase the wing's aspect ratio without increasing the structural stress and weight of the wing. Although increasing the span is also able to reduce the induced drag, it also introduces parasitic drag and requires more power to support the weight of the wing, which results in no overall savings. The winglet can help solve this problem, it increases the aspect ratio, but does not increase the wing's wingspan.

In the "model type" selection, the main wing type is selected as "delta wing", and when the tail type is selected as "winglet", the rudder angle of the two rudders of the winglet can be adjusted at this interface. (Applicable only to models with one servo on each side of the rudder).



- The amount of operation of each servo can be adjusted separately. (For the connection method of the steering gear, please refer to "Servo connection in different model categories")
- When the connection causes the mixing direction to be reversed, it can be adjusted by changing the polarity (+/-) of the action amount.
- When the amount of action is too large or the rudder is repeated, the servo may not respond. Be sure to confirm the actual movement of the body when setting.

* Flight conditions: Set the "Flight Conditions" control switch in [Model Menu] → [Condition]. Switching is performed by switches, and function settings are made separately.

Condition

Interface path: WFLY → [Model Menu] → [Condition]

With this function, flight conditions can be configured as needed, and there are 5 flight conditions to choose from.

If you do not need to use the conditional switching function, you do not have to set it on this page. The default configuration can be used directly.

When multiple flight conditions are set, the priority between them is to prioritize the final flight conditions!

Delay: Avoid swaying of the fuselage caused by sudden changes in the position of the steering gear or the unsynchronized action time between the passages when switching flight conditions.

Assign control switch: By default, there is no switch assignment (--), click to enter the assignment interface. Switching between flight conditions can be performed using switches such as a toggle switch, a stick, and a lever. Set the unwanted flight condition switch to empty (--).

Rename: Which condition needs to be modified, click on the name bar on the left to directly rename the operation. Long press the name to reset the default name

Condition	
Condition1	
Condition2	--
Condition3	--
Condition4	--
Condition5	--

Click to delay configuration interface

Each flight condition can be set separately for the corresponding delay, and the set control switch can be activated to set the delay value of each channel corresponding to the flight condition.

Condition				1/2
Channel	Delay	Channel	Delay	
1 Aileron	0	6 Flap	0	
2 Rudder2	0	7 Aileron2	0	
3 Throttle	0	8 Flap2	0	
4 Rudder	0	9 Elevator	0	
5 Gear	0	10 Camber	0	

12 channels can be individually set to delay

Switch Description:

Condition		
	Mode	
	logic	
SwitchA	logic	SwitchB
--	And	--

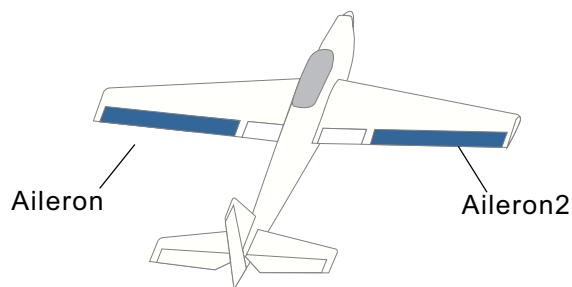
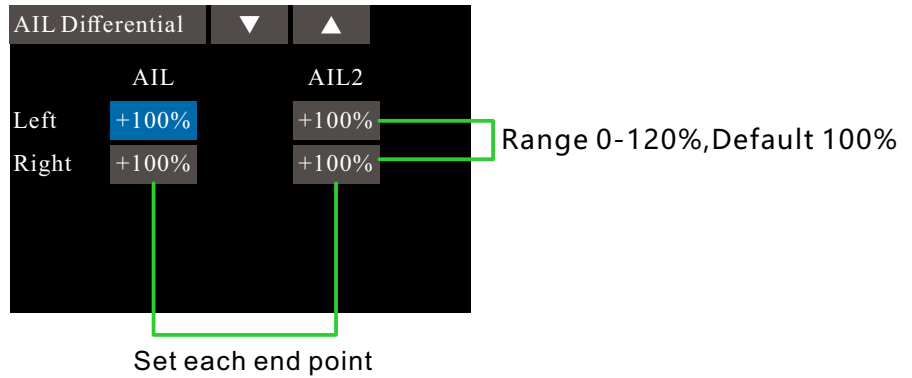
Separate, single switch control; logic, combined switch control.
"AND" mode: The flight conditions can be switched when both switches are turned on.
"OR" mode: As long as one switch is turned on, the flight conditions can be switched.
XOR mode: When the positions of the two switches are reversed, the flight conditions can be switched.
* "On", "Off": When the switch is selected, the selected gear position or position.

AIL Differential

Interface path: WFLY → [Model Menu] → [AIL Differential]

When the ailerons are controlled by two servos, the ratio of the upper and lower rudder angles of the left and right ailerons can be independently adjusted.

*This function is only used on the two-wing models after the model is selected.



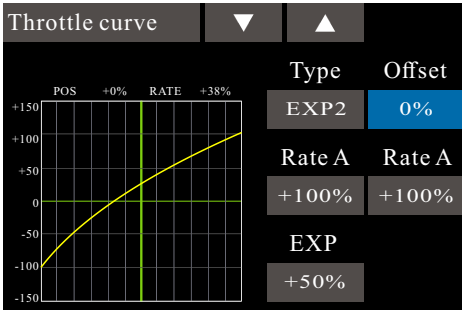
* Flight conditions: Set the "Flight Conditions" control switch in [Model Menu] → [Condition]. Switching is performed by switches, and function settings are made separately.

* When debugging, please operate the stick to the end point for maximum motion verification to avoid exceeding the movement range of the servo or the model body.

Throttle Curve

Interface path: WFLY → [Model Menu] → [Throttle Curve]

This function adjusts the action curve of the throttle channel to optimize the corresponding power level when the throttle stick is input.



-
- Setting instructions**
The curve control switch for throttle lock needs to be set in [Model Menu] → [Throttle Lock].
 - Note: When starting the engine, be sure to start the engine at normal idle speed in normal mode.
 - * Three curves can be set
 - * Flight conditions: Set the "Flight Conditions" control switch in [Model Menu] → [Condition]. Switching is performed by switches, and function settings are made separately.

Throttle Cut

Interface path: WFLY → [Model Menu] → [Throttle Cut]

Safely and easily to turn off the engine. Throttle cut provides an easy way to stop the engine from running. Generally speaking, it can be realized by dialing a hardware switch in an idle state. This function cannot be triggered when the throttle is high to prevent any mis-operation. The position and direction of the switch must be selected because the initial setting is [--]

The selected hardware cut switch adjusts the ratio value when the throttle and throttle lever are idle down, until the engine can be completely shut down.

In addition, verify that the throttle link is not tightened or that the servo is not overloaded.

The screenshot shows the 'Throttle Cut' interface. It includes a table with settings and a vertical slider.

Throttle Cut	
Status	INH
Switch	--
Cut Pos.	17%
Throttle	17%

Annotations:

- Function switch, default [--] points to the 'Switch' field.
- Range 0%-50%, default 17% points to the 'Cut Pos.' field.
- Set the throttle trigger position points to the 'Throttle' field.
- The set cut position points to the yellow bar on the slider.
- Current position of throttle stick points to the white arrow on the slider.

DANGER

The "cut position" must not be set higher than the lowest speed throttle position. It is dangerous if the engine runs at high speed.

Cut position setting

- 1 Status is switched to "ACT"
- 2 Click the "Switch" button to pop up the "Switch Assignment" interface and select the control switch.
- 3 Turn on the selected "cut control switch", the engine stick is in the idle down state, adjust the rate until the engine (motor) stops completely.

Please pay attention to the throttle connection here, do not let the servo exceed the travel.

Throttle Hold

Interface path: WFLY → [Model Menu] → [Throttle Hold]

This function sets the throttle in the cut position during landing. The throttle servo speed can be adjusted.

Note: The throttle lock is associated with flight conditions and the throttle lock function must be set separately with different flight conditions.

Place the stick on the throttle position you want to hold with Range 0%-50% and Default 17% , click the value button or the confirmation button to get the position(POS.).

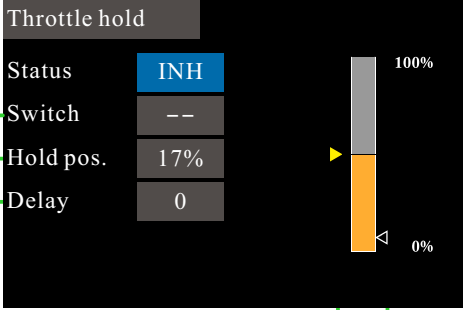
Set the response speed of the [Throttle Hold] function switch with range 0-100 and default 0 , and there is no conflict with the [Condition] delay.

Control switch position

Throttle hold	
Status	INH
Switch	--
Hold pos.	17%
Delay	0

The set throttle hold output position

Current throttle position



Function application instruction

When the electronic helicopter is performing a landing action, the propeller is generally required to operate at low idle speed in order to land safely and smoothly.

However, the working principle of electric helicopters and oil-powered helicopters is different. The setting here needs to distinguish the "hold position" of the throttle according to the model power, and make adjustments according to the actual application.

The operation of the electric helicopter is more flexible than the oil engine, so it can be set low or closed (depending on the actual situation).

The engine of the oil-powered helicopter runs, and the acceleration and deceleration dynamic response time is much longer than that of the motor, so the "hold position" needs to be higher than the motor type.

WARNING

When flying, be sure to turn off the "stunt" function warning switch to start the engine at idle down.

Idle Down

Interface path: WFLY → [Model Menu] → [Idle Down]

The idle down is usually used when landing. By operating a switch, the engine speed can be reduced.

This feature is only available when the throttle position is low.

Function control switch,
default [--]

The position of the throttle at
"Idle Down",
Range: High[-100%],
Low[+100%], default 0%

Idle down

Status	INH
Switch	--
Offset	0%

Setup steps

- 1 Click the status button to enable the [Idle Down] function.
- 2 Click the switch button to assign the function switch and set the function open position of the switch.
- 3 Turn on the selected[Idle Down] control switch.
- 4 The engine stick is in the idle state and the rate is adjusted until the engine reaches the minimum speed.

Please pay attention to the throttle connection here, do not let the servo exceed the stroke. (When set to a negative ratio, shift to the throttle high direction.)

* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching is performed by switches, and function settings are made separately.

Aileron to Rudder

Interface path: WFLY → [Model Menu] → [Aileron to Rudder]

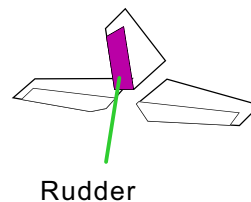
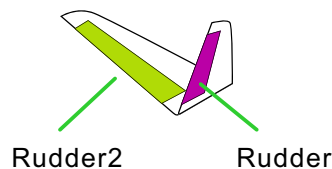
This function is required when mixing the rudder and ailerons. This feature allows the model to tilt to a steeper angle.

Winglet

Aileron to rudder		▼	▲
Status	INH	Functional status (INH, ON, default [INH])	
Switch	--	Function control switch (default [--])	
	Rudder	Rudder2	
Left	+100%	+100%	The ratio of the left side of the mixing, the range is $\pm 100\%$, the default is 0%.
Right	+100%	+100%	
			Mix right side ratio, range $\pm 100\%$, default 0%

Position 2 mixing
Position 1 mixing

Aileron to rudder		▼	▲
Status	INH		
Switch	SA		
	Rudder		
Left	+100%		
Right	+100%		



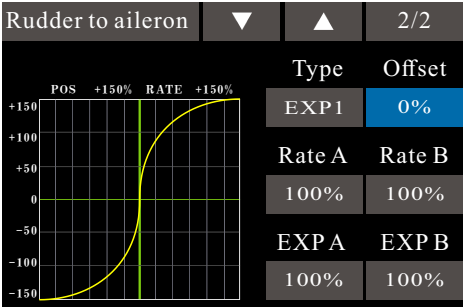
- This function can be used to control "on" / "off" with the switch during flight. (If you want to keep it on, set it to [--], you can also set it to [--], and the position is "On" to achieve the function normally open.)
- The mixing rate of this function can be adjusted.
- Different types of wings will display different interface displays.

* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching is performed by switches, and function settings are made separately.

Rudder to Aileron

Interface path: WFLY → [Model Menu] → [Rudder to Aileron]

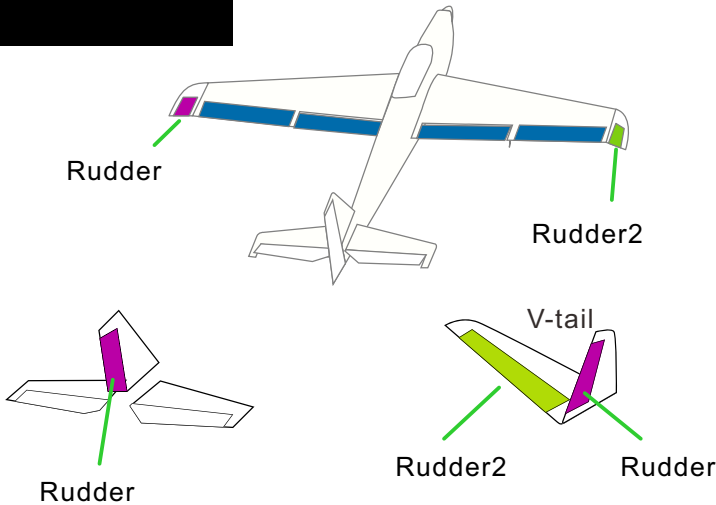
This function is required when mixing ailerons and rudders. This function is used when the rudder is used for roll, such as side flying. Can also be applied to tilting or turning in a real machine, large model or full size model.



The screenshot shows the 'Rudder to aileron' menu with the following options:

Status	INH
Switch	--
Link	OFF

- Function status button (INH, ON, default [INH])
- Function control switch (default [--])
- Connect this mix to other mixes (default [off])



- This function can be used to control "on" / "off" with the switch during flight. (If you want to keep it on, set it to [--], you can also set it to [--], and the position is "On" to achieve the function normally open.)
- Setp function: It can connect this mix to other mixes.
- The mixing rate of this function can be adjusted.
- Three types of curves can be set.

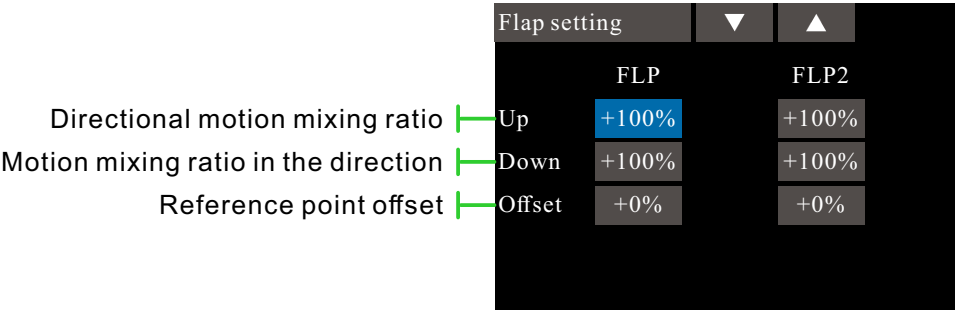
* Flight conditions: Set the "Flight Conditio" control switch in [Model Menu] → [Condition]. Switching by switch to perform function setting separately.

Flap Setting

Interface path: WFLY → [Model Menu] → [Flap Setting]

Each flap's up and down motion stroke can be individually adjusted for each servo according to the type of wing.

* This function is only available for models with flaps.



Up and down action mixing ratio range $\pm 120\%$, default 100%
Offset reference point range $\pm 100\%$, default 0%.

* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching by switch to perform function setting separately

Camber Mix

Interface path: WFLY → [Model Menu] → [Camber Mix]

This function is used to adjust the operating ratio on the positive and negative directions (ailerons, flaps) of the airfoil flaps. The ratio of the ailerons, flaps, and elevators can be individually adjusted to correct for changes in attitude caused by airfoil operations. The interface of different wing types will also be the same.

Camber mix

▼▲

Status

INH

Switch

--

AIL

AIL2

ELE

ELE2

Rate1

+0%

+0%

+0%

+0%

Rate2

+0%

+0%

+0%

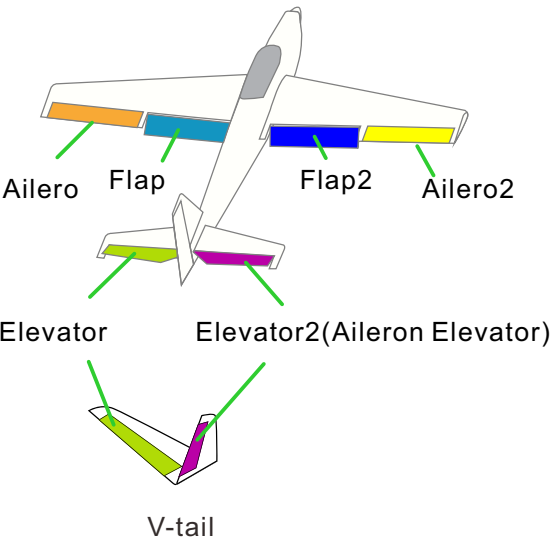
+0%

Function status switch (INH, ON, default [INH])

Control switch assignment, default [--]

Different aircraft types will have different wings

Adjust in the positive and negative directions, range ±100%, default 0%



The up/down ratio of the ailerons, flaps, and elevators can be adjusted separately using curves. When the mechanical connection action of the fuselage is opposite to the mixing direction, the mixing polarity can be changed to adjust (+ or -).

This function can be switched "on" or "off" with the switch during flight. (If you want to keep it on, set it to [--], you can also set it to [--], and the position is "On" to achieve the function normally open.)

* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching is performed by switches, and function settings are made separately.

Elevator to Camber

Interface path: WFLY → [Model Menu] → [Elevator to Camber]

Use this function when you need to mix flap operation and elevator operation. When the mixing control is turned on, the elevator will be raised while the flap is lowered, which can increase the lift.

Elevator to camber

▼

▲

Status

INH

Switch

--

AIL

AIL2

Rate1

+100%

+100%

Rate2

+100%

+100%

Function status switch (INH, ON, default [INH])

Control switch assignment, default [--]

Different aircraft types are with different wings

Adjust in the positive and negative directions, range ±100%, default 0%

This function can be switched "on" or "off" with the switch during flight. (If you want to keep it on, set it to [--], you can also set it to [--], and the position is "On" to achieve the function normally open.)
When the mixing is activated, the elevator on the tailless wing is also affected.

* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching is performed by switches, and function settings are made separately. * The interface is different from the wings.

Camber Flap To Ele

Interface path: WFLY → [Model Menu] → [Camber Flap to EIE]

When using flaps, the pitch angle of the model has a tendency to change. This mixing compensates for the attitude change of the model by combining the inputs of the elevator.

The ratio of the upper and lower directions of the elevator can be adjusted. If the mixing direction is reversed due to a connection problem, you can also make adjustments by changing the polarity of the ratio.

Camber flap to EIE

Status

INH

Switch

--

Rate1

0%

Rate2

0%

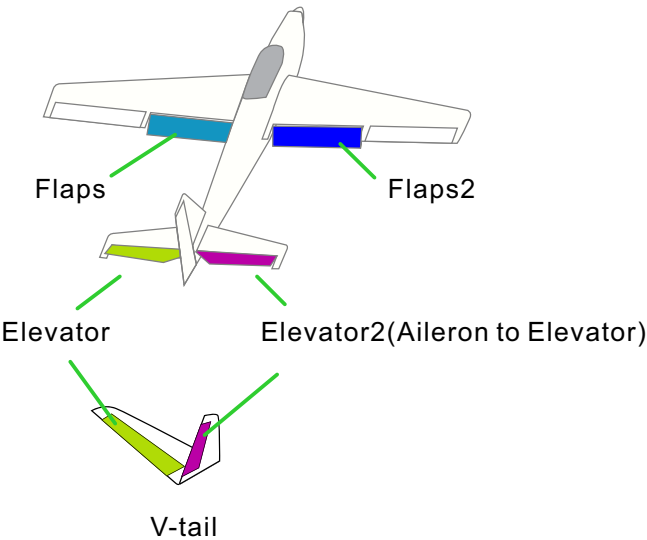
ELE

Function status switch (INH, ON, default [INH])

Control switch assignment, default [--]

Different aircraft types will have different wings

Adjust in positive and negative directions, range ±120%, default 0%



In flight, this function can be switched on or off with the switch (set to [-] if it is always on, or [-], and the position is "on" to achieve the function normally on.)

* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition] to switch through the switches and perform function settings separately.

Aileron To Camber Flap

Interface path: WFLY → [Model Menu] → [Aileron to Camber Flap]

This mixing uses the aileron mode to operate the flaps. When the aileron stick is operated, both the aileron and the flap operate simultaneously in the aileron mode, which can improve the characteristics of the snap roll operation.

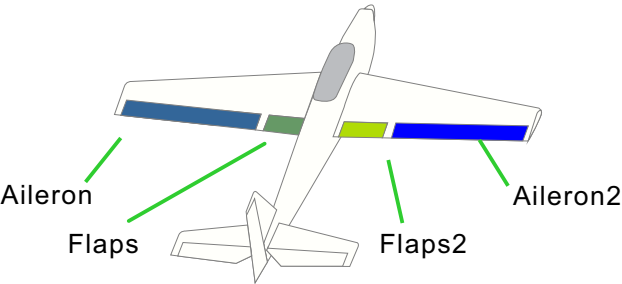
* Different types of interface on the wing type

Aileron to camber

▼

▲

Status	INH		Function status button (INH, ON, default [INH])
Switch	--		Function control switch (default [--])
Link	OFF		Connect this mix to other mixes (default [off])
	FLP	FLP2	
Left	+0%	+0%	Adjust in positive and negative directions, range ±120%, default 0%
Right	+0%	+0%	



By setting the switch, mixing can be turned on during flight. If you want to keep it on, set it to [--], you can also set it to [--], and the position is "On" to achieve the function normally open.
Step function: can connect this mix to other mixes.

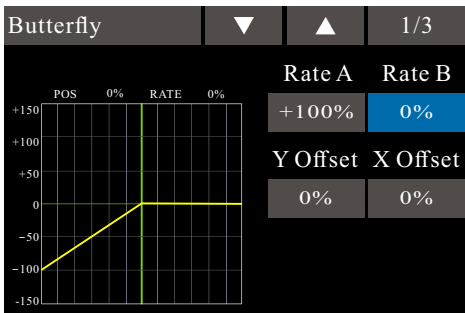
* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Flight Condition]. Switching is performed by switches, and function settings are made separately.

Butterfly

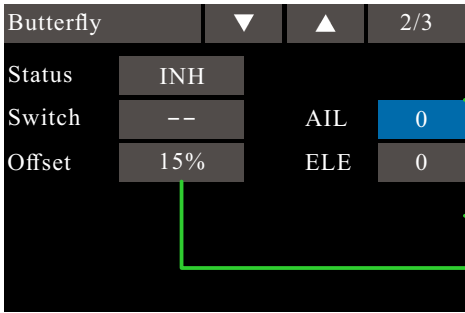
Interface path: WFLY → [Model Menu] → [Butterfly]

该功能用于同时抬升左右副翼与放下襟翼，来快速降低模型的速度。
【蝴蝶刹】功能在降落时能产生很高的气动效率。

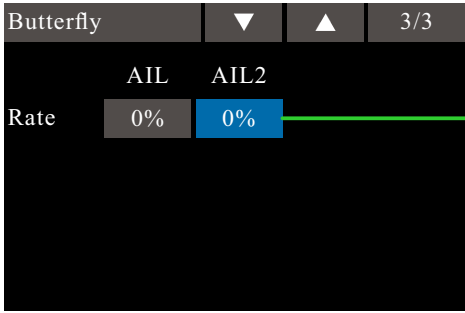
- 能达到以下效果：
- 1 减低模型速度。
 - 2 向翼尖提供后洗气流以减低翼尖失速的趋势。
 - 3 向机翼中心提供更多升力 用以支持模型以慢速飞行。



Elevator adjustment



Servo speed setting
* Different types of interface on the wing type
[Butterfly] function operation reference point offset
Aileron ratio adjustment



Aileron ratio adjustment
* Different types of interface on the wing type

-
- This function can be switched "on" or "off" with the control switch during flight. (If you want to keep it on, set it to [--], and the position is "on" to achieve the function of normally open.)
- The reference point in the butterfly brake function can set the offset.
 - It can adjust the operating speed of the ailerons and flaps.
 - The differential rate can be adjusted.
- * Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching by switch to perform function setting separately

Trim Mix

Interface path: WFLY → [Model Menu] → [Trim Mix]

The ailerons, elevators, and flaps ([Camber Flaps]) can be pre-set with a trimming offset. And use the switch to call up this setting during flight based on flight status.

For example, this function can be set to take off the flaps and ailerons during take-off, and the elevators are raised slightly to take off; at high speeds, the outer flaps and the elevators are raised and the elevators are lowered slightly.

In order to prevent sudden trimming changes when switching flight conditions, a delay can be set between the two flight conditions to provide a smooth transition.

Control switch, default [--]
Safety switch, used with the "Switch" switch to ensure safe use
Function delay switch
Delay value

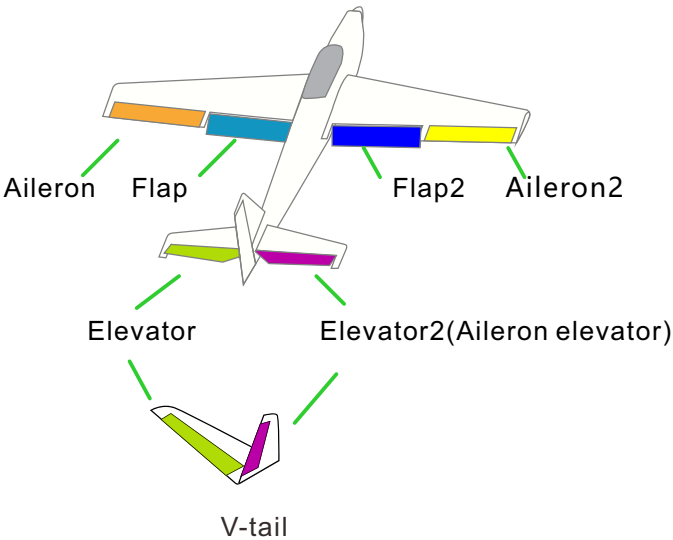
Trim mix	▼	▲	1/2
Status	INH		Speed
Switch	--	AIL	0
Auto SW	--	ELE	0
Delay SW	--	FLP	0
Delay	0		

Servo speed setting, default 0
*The interface contents are different from the model types

Trim mix	▼	▲	2/2	
	AIL	AIL2	ELE	Flap
Rate	0%	0%	0%	0%

Servotrimming ratio for each channel, range ±250%, default 0%

*The interface contents are different from the wingl types



- Ailerons, elevators, and flaps can be adjusted separately.
- By setting the switch, this function can be called up directly during flight.
- The reaction speed of the ailerons, elevators and flaps can be adjusted.
- The delay can be set separately in each condition.

* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching is performed by switches, and function settings are made separately.

- The adjustment of the mixing amount can be trimmed by the knob setting.
- By setting the automatic switch, the trim mixes can be linked with the stick. Unlike the function on/off, it can be set as the stick switch.

Gyro

Interface path: WFLY → [Model Menu] → [Gyro]

This function is used to adjust the gyroscope sensitivity. Set the sensitivity and mode of operation (normal/AVCS) for each flight condition or switch.

Generally, when only the normal AVCS(lock tail) application is applied, it is only necessary to set a set of gyroscopes.

Condition mode

Gyro		1/2
Gyro	Gyro 1	
Mode	Condition	
Position	Condition1	
Status	INH	
Type	AVCS	

3 channels can be set separately, Gyro\Gyro2\Gyro3.

The control gyro sensitivity can be activated by "Flight Condition" or by assigning switches, knobs, and so on.

The five "Condition" can set the gyroscope sensitivity separately.

Switch mode

Gyro		1/2
Gyro	Gyro 1	
Mode	Switch	
Position	1	
Switch	--	
Status	INH	
Type	AVCS	

Each control switch can set the gyroscope sensitivity separately, and can set five kinds of sensitivity.

The sensitivity value of the specified position of the activation switch can be controlled by customizing switches, knobs, etc.

Inhibit and enable the current Gyro configuration group

Normal mode, (AVCS) lock tail mode

Gyro		▼	▲	2/2
Rate	AVCS100%			
Tuning	--			
	+0%		+0%	

Gyro operation mode. Normal, AVCS100%

Set the associated tuning control switch, knob, etc. for sensitivity adjustment

Control switch current real-time position

Can set the tuning range value $\pm 20\%$

Function setting

1 When using the function, first assign the function channel on the [Function] interface, and set the "Switch" and "Tuning" to [--] in [Function].

2 Mode selecting. Optional "switch" or "Flight condition".

3 Position selecting. In each mode, there are 5 groups of positions to choose from, and the corresponding sensitivity can be set separately. In the "switch" mode, you need to select the position switch, the default is [--].

4 Status selecting. Select whether the "Position" configuration above is enabled or not.

5 Type selecting. Select the sensitivity type of the corresponding work for the current "position".

6 Ratio adjustment. The options vary depending on the type option ("Normal" type, "Rate" range 0%-100%; under "AVCS" type, "Rate" range is Normal[0~100%], AVCS[0~100%]).

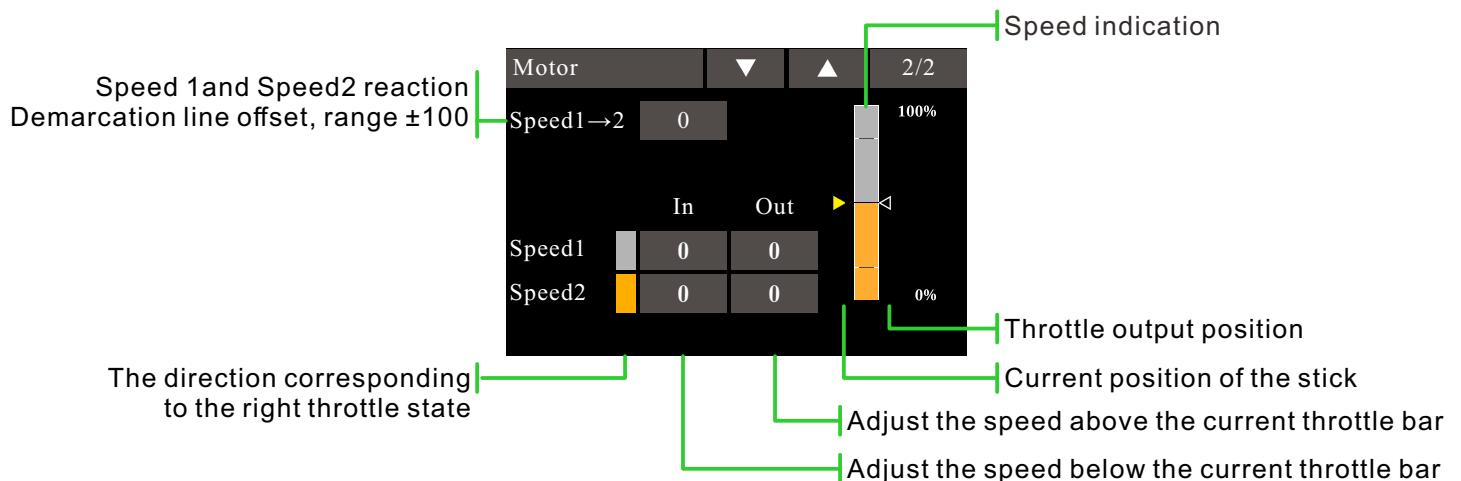
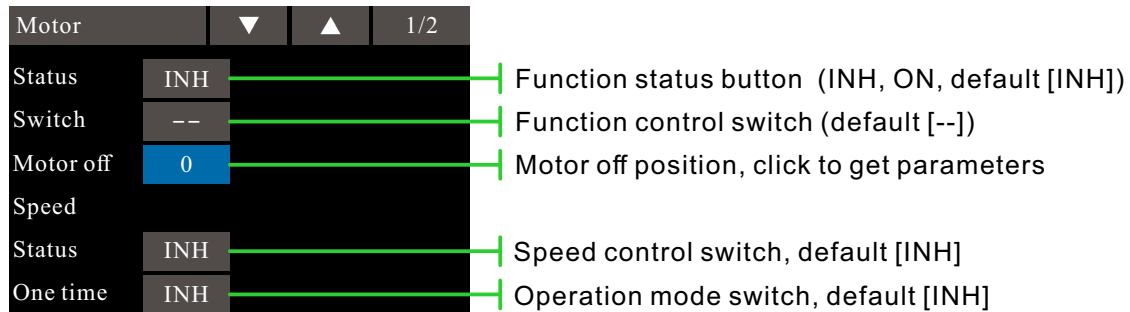
7 Tuning the switch selection and tuning the ratio setting. Sensitivity tuning switch, the default is [--]; the rate value can be set to $\pm 20\%$. Used for tuning the sensitivity.

The sensitivity required for different flight modes is different, so switch the conditions (Position) separately for sensitivity adjustment.

Motor

Interface path: WFLY → [Model Menu] → [Motor]

This function allows you to set the speed of the motor after the motor has been activated by a switch. Two ranges of operating speeds, slow flight and high speed flight (speed 1 / speed 2) can be set. This function can also be operated as a safety function by programming to a control switch.



*The speed here refers to the acceleration and deceleration speed (reaction speed) of the motor homing

- Set the motor control switch in [Channel Settings].
- The input/output motion speed can be adjusted separately in both ranges (speed 1 / speed 2).
- The boundary points of the two ranges can be moved (speed 1 → 2).
- It can be set when the motion speed is set to only the first "input" direction operation. However, if the switch is turned off before the action is completed, it will still be valid for the next operation. To set this action again, simply set the "Speed" status switch and the "One Time Mode" switch to [Disable] in the speed setting interface, and then set it to [Enable].
- When setting or changing the control switch, you need to set or change it in the function setting [Channel Settings] page of the context menu. (Set in the control switch corresponding to [Motor].)

* Flight conditions: Set the "Flight Conditions" control switch in [Model Function] → [Flight Conditions] to switch through the switches and perform function settings separately.

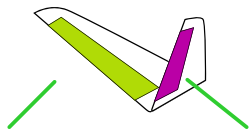
Notice:

- First determine the direction in which the motor is turned off, then set the speed. If you need to modify the direction of the closing, the servo speed must also be reset.
- It is recommended to set it with the [Fail Safel Protection] function.
- The basic movement direction should be set with the ESC. Reverse function can be used.
- Be sure to set the position where the motor is turned off (stop position).

V-Tail

Interface path: WFLY → [Model Menu] → [V-Tail]

If the tail type is "V-tail" which is selected from the model type selection of the context menu, the elevator and rudder of the V-tail can be adjusted in this interface. (The V-tail uses two servos to control the rudder at the same time. It is used as an elevator. In addition to the simultaneous lifting and lowering of each rudder surface (used as an elevator), the two rudder surfaces are used as rudders in the opposite direction. For the V tail, This is also known as the direction elevator because they can be used for both the rudder and the elevator.)



Elevator (rudder 2) Rudder (elevator2)

V-Tail		ELE		RUD	
		Down	Up	Left	Right
ELE	RUD2	+100%	+100%	+100%	+100%
RUD	ELE2	+100%	+100%	+100%	+100%

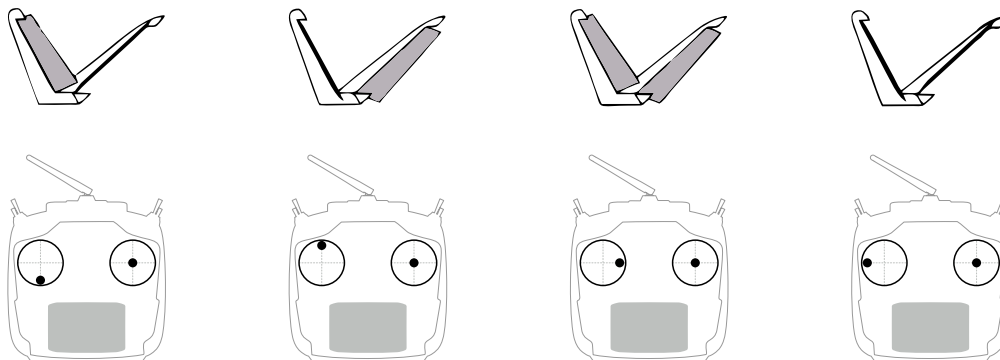
Range $\pm 120\%$, default 50%

Adjusting the elevator Adjusting the rudder

- The amount of operation of each servo can be adjusted separately. (For the connection method of the servo, please refer to "Servo connection of different model categories")
- When the connection causes the mixing direction to be reversed, it can be adjusted by changing the polarity (+/-) of the action amount.
- When the amount of action is too large or the rudder is repeated, the server may not respond. Please adjust before and after 50%. Be sure to confirm the actual movement of the body when setting.

* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Flight Condition]. Switching is performed by switches, and function settings are made separately.

Action output example:



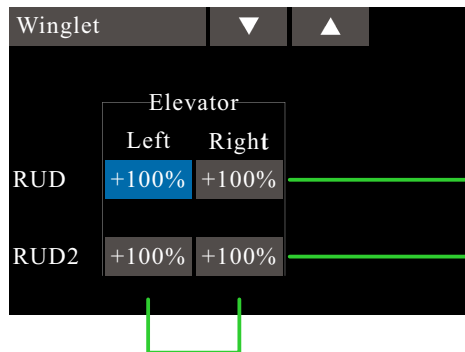
Winglet

Interface path: WFLY → [Model Menu] → [Winglet]

This function is used to adjust the left and right rudder of the model winglet. The winglet is used to reduce the induced drag caused by the wing tip vortex. (Winglets are vertical or angled extensions at the end of each wing.)

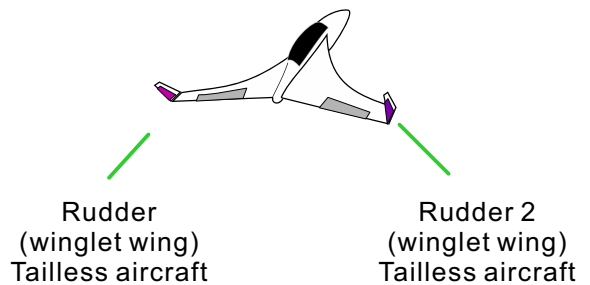
The winglets can significantly increase the wing's aspect ratio without increasing the structural stress and weight of the wing. Although increasing the span is also able to reduce the induced drag, it also introduces parasitic drag and requires more power to support the weight of the wing, which results in no overall savings. The winglet can help solve this problem, it increases the aspect ratio, but does not increase the wing's wingspan.

In the "model type" selection, the main wing type is selected as "delta wing", and when the tail type is selected as "winglet", the rudder angle of the two rudders of the winglet can be adjusted at this interface. (Applicable only to models with one servo on each side of the rudder).



Range ±120%, default 100%

Adjust the amount of rudder movement



- The amount of operation of each servo can be adjusted separately. (For the connection method of the steering gear, please refer to "Servo connection in different model categories")
- When the connection causes the mixing direction to be reversed, it can be adjusted by changing the polarity (+/-) of the action amount.
- When the amount of action is too large or the rudder is repeated, the servo may not respond. Be sure to confirm the actual movement of the body when setting.

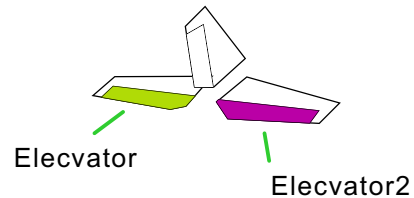
* Flight conditions: Set the "Flight Conditions" control switch in [Model Menu] → [Condition]. Switching is performed by switches, and function settings are made separately.

Ailevator

Interface path: WFLY → [Model Menu] → [Ailevator]

If the aileron type is selected in the model type selection function of the context menu and the aileron type is selected in the tail type, the elevators of the aileron elevator tail type can be adjusted in this setting interface. (Only for the body with one servo on each side of the elevator)

When operating the ailerons, let the elevator servo act as aileron to improve the performance of the rolling shaft.



Ailevator				
	ELE		AIL	
	Down	Up	Left	Ritht
ELE	+100%	+100%	0%	0%
AIL5				
RUD				
AIL	+100%	+100%	0%	0%

Range $\pm 120\%$

Adjust the amount of movement of the elevator separately

Adjust the amount of action of the aileron action on the elevator. (Set to 0 if only the 2 servos of the elevator are used instead of the ailerons)

- The amount of operation of each servo can be adjusted separately. (For the connection method of the servo, please refer to "Servo connection of different model categories")
- When the connection causes the mixing direction to be reversed, it can be adjusted by changing the polarity (+/-) of the action amount.
- If the amount of motion is too large or the rudder is repeatedly ruddered, the servo may be unresponsive. Be sure to confirm the actual movement of the body when setting.

* Flight conditions: Set the "Flight Condition" control switch in [Model Menu] → [Condition]. Switching is performed by switches, and function settings are made separately.

Condition

Interface path: WFLY → [Model Menu] → [Condition]

With this function, flight conditions can be configured as needed, and there are 5 flight conditions to choose from.

If you do not need to use the conditional switching function, you do not have to set it on this page. The default configuration can be used directly.

When multiple flight conditions are set, the priority between them is to prioritize the final flight conditions!

Delay: Avoid swaying of the fuselage caused by sudden changes in the position of the steering gear or the unsynchronized action time between the passages when switching flight conditions.

Assign control switch: By default, there is no switch assignment (--), click to enter the assignment interface. Switching between flight conditions can be performed using switches such as a toggle switch, a stick, and a lever. Set the unwanted flight condition switch to empty (--).

Rename: Which condition needs to be modified, click on the name bar on the left to directly rename the operation. Long press the name to reset the default name

Condition	
Condition1	
Condition2	--
Condition3	--
Condition4	--
Condition5	--

Click to delay configuration interface

Each flight condition can be set separately for the corresponding delay, and the set control switch can be activated to set the delay value of each channel corresponding to the flight condition.

Condition		1/2	
Channel	Delay	Channel	Delay
1 Aileron	0	6 Flap	0
2 Rudder2	0	7 Aileron2	0
3 Throttle	0	8 Flap2	0
4 Rudder	0	9 Elevator	0
5 Gear	0	10 Camber	0

12 channels can be individually set to delay

Switch Description:

Condition		
	Mode	
	logic	
SwitchA	logic	SwitchB
--	And	--

Separate, single switch control; logic, combined switch control.

"AND" mode: The flight conditions can be switched when both switches are turned on.

"OR" mode: As long as one switch is turned on, the flight conditions can be switched.

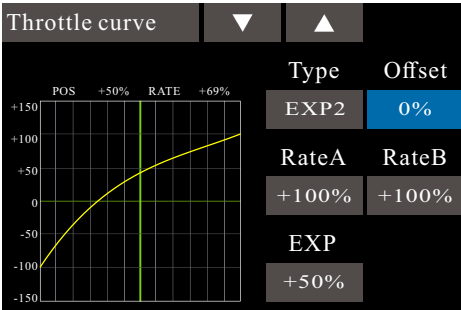
XOR mode: When the positions of the two switches are reversed, the flight conditions can be switched.

* "On", "Off": When the switch is selected, the selected gear position or position.

Throttle Curve

Interface path: WFLY→[Model Menu]→[Throttle Curve]

This function adjusts the action curve of the throttle channel to optimize the corresponding power level when the throttle stick is input.



Setting instructions

The curve control switch for throttle lock needs to be set in [Model Menu] → [Throttle hold].

Note:

When starting the engine, be sure to start the engine at normal idle speed in normal mode.

*Three curves can be set.

* Flight conditions: Set the "Flight Conditions" control switch in [Model Menu] → [Condition]. Switching is performed by switches, and function settings are made separately.

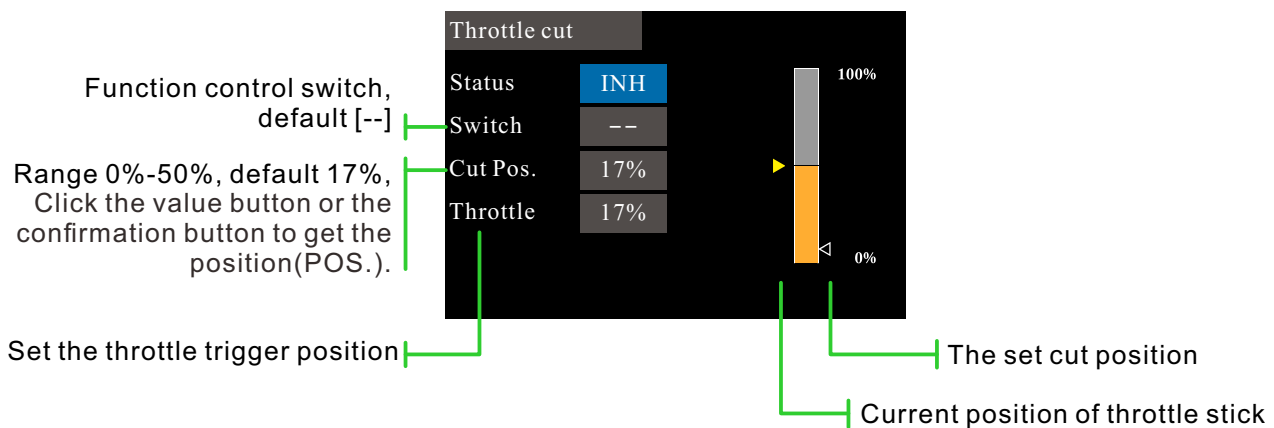
Throttle Cut

Interface path: WFLY→[Model Menu]→[Throttle Cut]

Safely and easily to turn off the engine. Throttle cut provides an easy way to stop the engine from running. Generally speaking, it can be realized by dialing a hardware switch in an idle state. This function cannot be triggered when the throttle is high to prevent any mis-operation. The position and direction of the switch must be selected because the initial setting is [--]

The selected hardware cut switch adjusts the ratio value when the throttle and throttle lever are idle down, until the engine can be completely shut down.

In addition, verify that the throttle link is not tightened or that the servo is not overloaded.



DANGER

The "cut position" must not be set higher than the lowest speed throttle position. It is dangerous if the engine runs at high speed.

Cut position setting

- 1 Status is switched to "ACT"
 - 2 Click the "Switch" button to pop up the "Switch Assignment" interface and select the control switch.
 - 3 Turn on the selected "cut control switch", the engine stick is in the idle down state, adjust the rate until the engine (motor) stops completely.
- Please pay attention to the throttle connection here, do not let the servo exceed the travel.

* Conditions: Set the "Flight Conditions" control switch in [Model Menu]→[Condition]. Switching is performed by switches, and function settings are made separately.

Throttle Hold

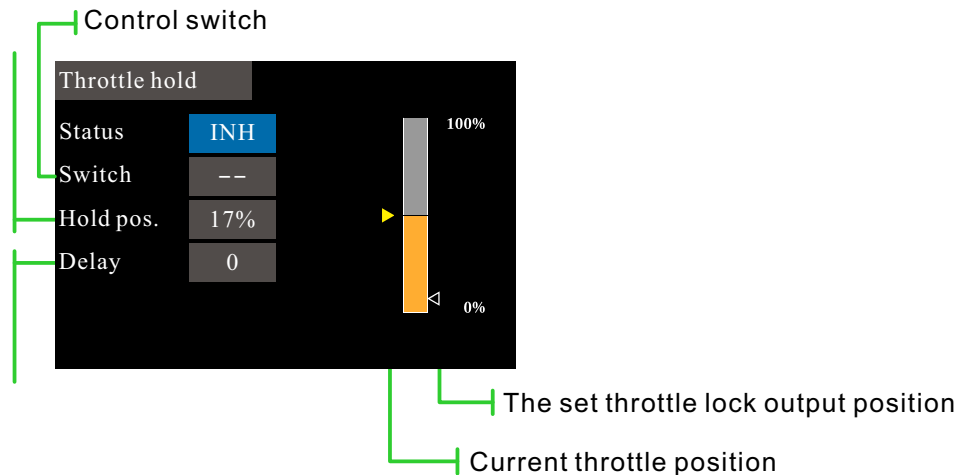
Interface path: WFLY → [Model Menu] → [Throttle Hold]

This function sets the throttle in the cut position during landing. The speed of the throttle servo can be adjusted.

Note: The throttle hold is associated with flight conditions and the throttle hold function must be set separately for different flight conditions.

Place the stick on the throttle position you want to hold with Range 0%-50% and default 17%, click the value button or the confirmation button to get the position(POS.).

Set the response speed of the [Throttle hold] function switch with Range 0-100 and the default 0, and there is no conflict with the [Condition] delay.



Function application instruction

When the electronic helicopter is performing a landing action, the propeller is generally required to operate at low idle speed in order to land safely and smoothly.

However, the working principle of electric helicopters and oil-powered helicopters is different. The setting here needs to distinguish the "hold position" of the throttle according to the model power, and make adjustments according to the actual application.

The operation of the electric helicopter is more flexible than the oil engine, so it can be set low or closed (depending on the actual situation).

The engine of the oil-powered helicopter runs, and the acceleration and deceleration dynamic response time is much longer than that of the motor, so the "lock position" needs to be higher than the motor type.

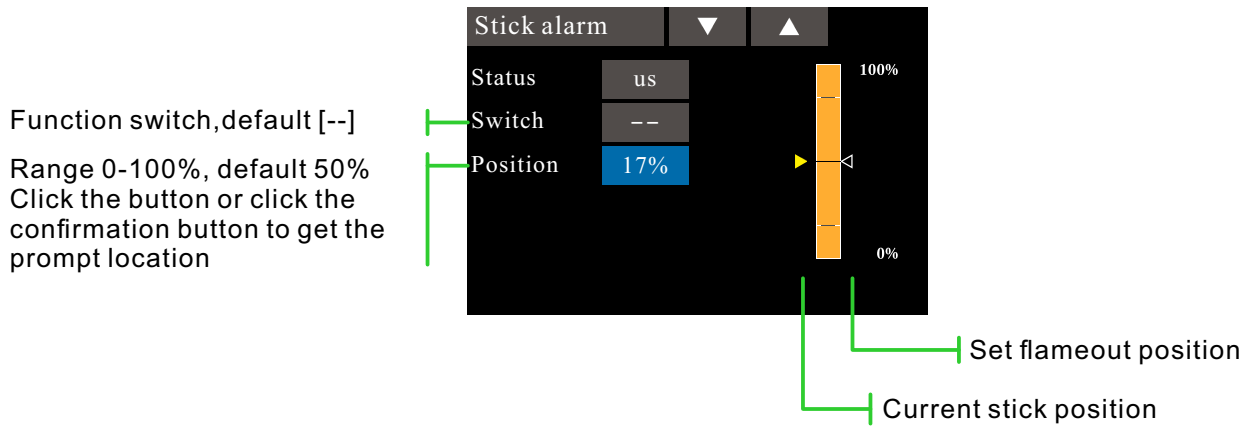
WARNING

When flying, be sure to turn off the "idle" function switch, start the engine at idle down.

Stick Alarm

Interface path: WFLY→[Model Menu]→[Stick alarm]

This function is used to make a sound prompt every time the remote control throttle stick passes the set position when the model is operated. It is convenient for the operator to confirm the throttle position.



Gyro

Interface path: WFLY → [Model Menu] → [Gyro]

This function is used to adjust the gyroscope sensitivity. Set the sensitivity and mode of operation (normal/AVCS) for each flight condition or switch.

Generally, when only the normal AVCS(lock tail) application is applied, it is only necessary to set a set of gyroscopes.

Gyro		1/2
Gyro	Gyro 1	<p>3 channels can be set separately, Gyro\Gyro2\Gyro3.</p> <p>The control gyro sensitivity can be activated by "Flight Condition" or by assigning switches, knobs, and so on.</p> <p>The five "Condition" can set the gyroscope sensitivity separately.</p>
Mode	Condition	
Position	Condition1	
Status	INH	
Type	AVCS	

Condition mode

Gyro		1/2
Gyro	Gyro 1	<p>Each control switch can set the gyroscope sensitivity separately, and can set five kinds of sensitivity.</p> <p>The sensitivity value of the specified position of the activation switch can be controlled by customizing switches, knobs, etc.</p> <p>Inhibit and enable the current Gyro configuration group</p> <p>Normal mode, (AVCS) lock tail mode</p>
Mode	Switch	
Position	1	
Switch	--	
Status	INH	
Type	AVCS	

Switch mode

Gyro		▼	▲	2/2
Rate	AVCS100%			<p>Gyro operation mode. Normal, AVCS100%</p> <p>Set the associated tuning control switch, knob, etc. for sensitivity adjustment</p> <p>Control switch current real-time position</p> <p>Can set the tuning range value $\pm 20\%$</p>
Tuning	--			
	+0%		+0%	

Function setting

1 When using the function, first assign the function channel on the [Function] interface, and set the "Switch" and "Tuning" to [--] in [Function].

2 Mode selecting. Optional "switch" or "Flight condition".

3 Position selecting. In each mode, there are 5 groups of positions to choose from, and the corresponding sensitivity can be set separately. In the "switch" mode, you need to select the position switch, the default is [--].

4 Status selecting. Select whether the "Position" configuration above is enabled or not.

5 Type selecting. Select the sensitivity type of the corresponding work for the current "position".

6 Ratio adjustment. The options vary depending on the type option ("Normal" type, "Rate" range 0%-100%; under "AVCS" type, "Rate" range is Normal[0~100%], AVCS[0~100%]).

7 Tuning the switch selection and tuning the ratio setting. Sensitivity tuning switch, the default is [--]; the rate value can be set to $\pm 20\%$. Used for tuning the sensitivity.

The sensitivity required for different flight modes is different, so switch the conditions (Position) separately for sensitivity adjustment.

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