

STOP FALL

UAV crash detection module

by **33DEVICES**

User Manual

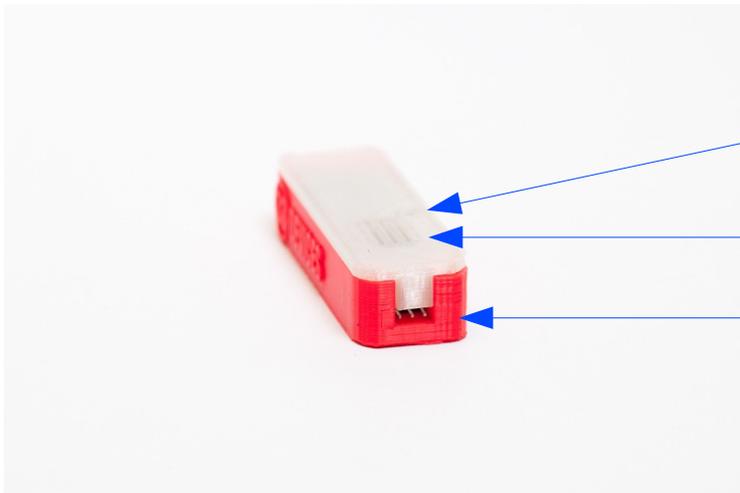


Stop Fall module is designed to detect whenever your UAV begins to fall and to automatically activate safety system. Internal sensor continuously measures the speed and the position and once UAV will start falling Stop Fall will send a signal to deploy the parachute. Along with automatic crash detection Stop Fall is able to use incoming PWM signal from flight controller or a receiver to let you activate the parachute manually.

Technical specifications:

Power supply	DC 5-24 V
Power consumption	21 mA
Max. servo power consumption	1.5 A
Weight	15 g
Dimensions	79x23x15 mm

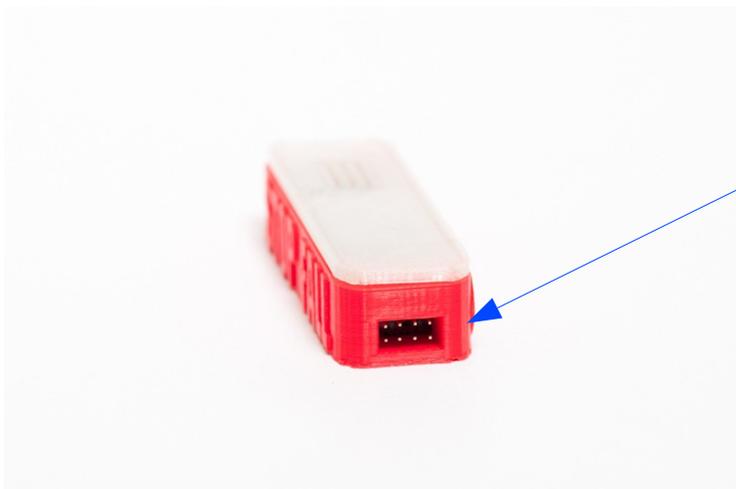
Stop Fall interface



Settings button

Sound alarm and LED

PWM output (to servo)



Multiport:



Power input
5-24V



PWM Input and/or
5V power input



USB adaptor port

Installing Stop Fall

Stop Fall can be installed in any place of your UAV and in any position, not only flat or 90 degrees. It will detect the crash in any position even it's rolling!*

Servo position adjust

Before using Stop Fall you must adjust servo position on your parachute module. To adjust the position follow these steps:

1. turn off Stop Fall power
2. hold the Settings button with a needle and power on Stop Fall
3. Stop Fall will do sound signal and the LED will turn on constantly
4. tune the servo by pressing Settings button
5. turn off the power, servo position will be stored in to memory

Manual deploy

To test the parachute deployment you may use manual deployment. To do this follow these steps:

1. turn on Stop Fall power
2. press Settings button with a needle and hold for more than 5 seconds, Stop Fall will warn with a sound once a second
3. after 5 seconds the servo will be moved to it's predefined position, SOS signal will be alarmed by sound and LED

Work mode

After powering on Stop Fall will play short melody, do self-diagnostics, remember current PWM input signal and start working. Internal sensor will check the speed and position continuously and once it detects free fall the LED will blink once.

Automatic crash detect

The crash for Stop Fall module means a free fall for 1 second and more. This will allow to avoid sudden wind and extreme turns of your UAV and parachute will not deploy during the flight.

Manual parachute deployment

The signal for manual deployment means a change of PWM signal for more than 1/3 of its range. This means that once you move the predefined stick on your RC from one side to middle or to other side position the parachute will deploy.

After Stop Fall is deployed the parachute it will start SOS alarm with sound and LED until power will be switched off.

Warning! Firstly turn on UAV power, transmitter, receiver, video and other UAV electronics. Switch sticks on your RC to start positions. Only after that power on Stop Fall module! If you turn on Stop Fall first it may store incorrect PWM input signal and when you turn on the RC the PWM signal may be changed. Stop Fall will detect the change and may deploy the parachute!

** not faster than 3 turns per second*

Mode and status

Stop Fall uses sound and LED indicators to communicate with the user. All statuses and errors will be blinked and alarmed. The LED shows error status as two digits: number of long blinks – first digit, number of short blinks – second digit.

Check the table below:

Mode/Status	At start	After
Work mode	Short melody + constant LED light	Once free fall is detected additional LED will blink
Servo adjust mode	Short melody + long sound alarm + constant LED light	Constant LED light
Crash detected	–	Servo moved, SOS sound alarm and LED blinks every 5 seconds
Sensor error	Long sound alarm	LED blinks with error 42
Low voltage	10 short sound alarms	LED blinks with error 43

Have questions? Write to support@33dev.ru
Website www.33dev.ru

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