Overview

18mm

10mm

Magnet×2

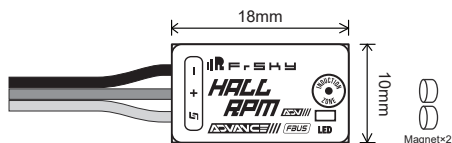**Specifications:**
- Dimension(Sensor): 18×10mm (L×W)
- Dimension(Magnet): φ6×3mm
- Weight(Sensor): 2.5g
- Weight(Magnet): 0.64g/block
- Voltage Range: 3.7V-8.4V
- RPM Range: 400-60000RPM

How to Use

### Step 1   Installation

Scenario 1:
1 MAGNET INSTALLATION. When using one magnet, the distance between the magnet and the center of the Induction Zone should be ≤4mm.

Scenario 2:
2 MAGNET INSTALLATION. When using both magnets, install them with opposite polarities, 180 degrees apart and the distance between the magnets and the center of the Induction Zone is ≤10mm.

Sensing Distance

Align with the sensing center point.

Rotation Surface
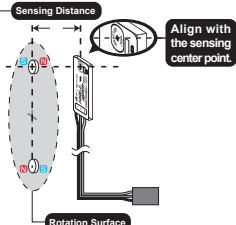
Step 1. Install the sensor and the magnetic block according to the diagram. Depending on the number and application of magnetic blocks, after installing the magnetic block(s), ensure they remain within the appropriate distance from the sensor.

Step 2   Power the sensor for initial test

The green LED indicator lights solid.

BATTERY

**Voltage Range: 3.7V-8.4V**
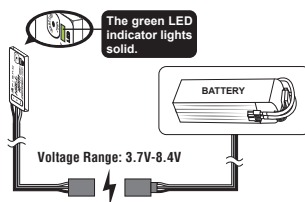
Step 2. Use a power battery or any free receiver channel to initially power the sensor for the first tests. The sensor's LED should be solid green at this point.

Step 3   Magnetic Signal Detection Test

The green LED indicator blinks slowly.
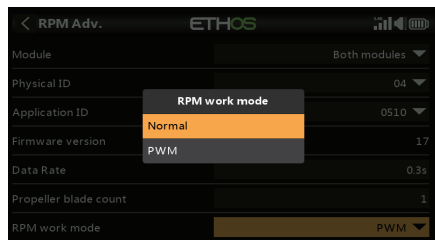
BATTERY

Rotation Surface
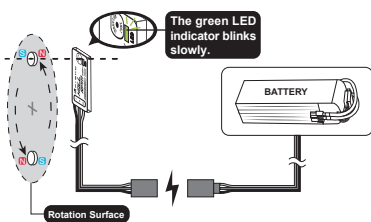
Step 3. Spin the Propeller (or the device the magnets are attached to). The sensor should detect the magnetic change which triggers the LED to flash slowly.

Step 4   Configure the Mode
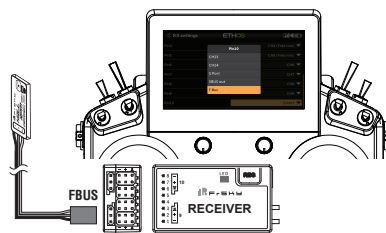
FBUS

RECEIVER

Step 4. After confirming the sensor is properly working in the step above, we can now choose the mode in which we will operate the sensor. Connect the sensor to an FBUS Port on your receiver (see your receiver's manual for information on how to access an FBUS port).

Note: The sensor supports 2 working modes: Normal Mode and PWM Mode.

| ‹ RPM Adv.	ETHOS	
Module		Both modules
Physical ID		04
Application ID		0510
Firmware version		17
Data Rate		0.3s
Propeller blade count		1
RPM work mode		PWM

RPM work mode
Normal
PWM

1. First, bind the receiver and set the channel intended for the sensor to FBUS mode.

2. Then connect the sensor to the FBUS port of the bound receiver.

3. On the transmitter side, in the ETHOS system, go to: [System] ▷ [Device Config] ▷ [Sensors] ▷ [RPM adv], and set the sensor to the desired working mode.

Within 5 seconds of each powering on, the sensor automatically detects the signal type (S.Port/FBUS) through the connected port. If the signal type cannot be identified:
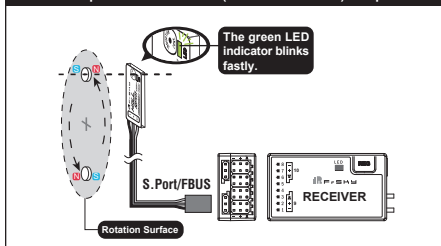❶ It defaults to FBUS mode when the sensor is set to Normal Mode.
❷ It works in the preset PWM mode if configured accordingly.

| Step 4.1 PWM Mode (Pulse Count Mode) setup | Step 4.2 Normal Mode (S.Port/FBUS Mode) setup |
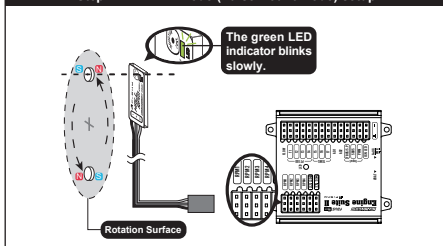
Step 4.1. When the sensor is set to PWM Mode, it can be connected to **the device (e.g. AES II, etc.) with the RPM signal port**. In this mode, the sensor's LED flashes slowly.

Step 4.2. When the sensor is set to Normal Mode, it can be connected to the **FBUS/S.Port signal port of the receiver**. In this mode, the sensor's LED flashes fast.

⚠ WARNING

Please refer to the installation diagram to install the sensor and magnet. Before each flight, ensure the installation to prevent the components from coming loose due to vibrations during use.
Do not install the magnet on parts such as propeller blades or other areas that are more susceptible to external forces and may lead to detachment.

Working Mode & LED Indications

Working Mode	Description
Normal Mode (S.Port/FBUS Mode)	In this mode, the RPM sensor is connected to the S.Port/FBUS port, the RPM value can be read directly from the Telemetry tool on the radio.
PWM Mode (Pulse Count Mode)	In this mode, the RPM sensor is connected to a device with an RPM port (e.g. AES series products, etc.), transmitting data based on one pulse signal per revolution to obtain the RPM value.

| Green LED	Working status
Off	The sensor is not powered.
Solid ON	The sensor is powed. No hall sensor data reception. No signal in transmission or stays in configuration process.
Slow flash (PWM Mode)	Receiving the magnet signal data. No S.Port/FBUS signal connected.
Fast flash (S.Port/FBUS Mode)	Receiving the magnet signal data and S.Port/FBUS signal on. Sensor data in transmission via S.Port/FBUS mode.

How to Update the Firmware
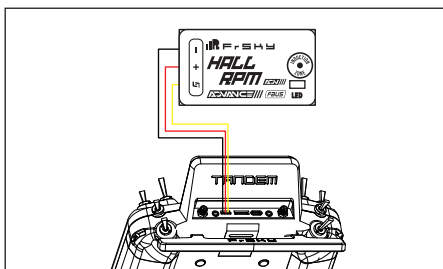
1. Connect the sensor to the S.Port connector on the transmitter. Signal wire towards the notch.
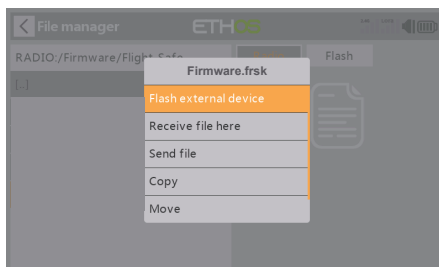
2. Copy the firmware file to the ETHOS radio. Use the File Manager tool to locate it, then select the file and choose "Flash external device."
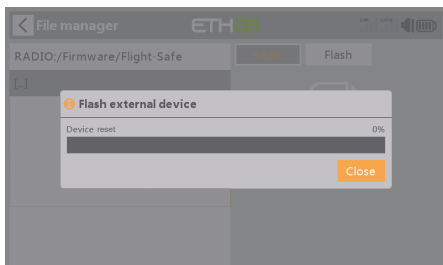
3. When a progress bar window appears with the message "Device reset," the firmware flashing process will begin automatically.
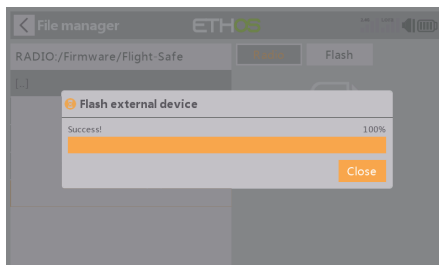
4. When the message changes to 'Flashing', wait for the progress bar to complete, this indicates that the firmware update is finished.

Telemetry Data & Parameter settings   [System] ▷ [Device Config] ▷ [Sensors] ▷ [RPM adv]

RPM (unit: r/m)	Revolutions Per Minute
Physical ID	When multiple device are used simultaneously, each device must be assigned a unique ID.
Application ID	When using the same type of sensors from different devices simultaneously, each device must be assigned a unique application ID to avoid conflicts.
Data Rate	Data Transmission Interval.
Propeller Blade Count	If you are using 1 magnet or 2, pole count should be set to 1. (on 2 magnets, you mounted them with opposite poles so it counts as 1). If you install multiple magnet pairs, take the number of magnets and divide by 2 to get the pole count.
Working mode	Normal Mode (stand alone sensor) & PWM Mode (for use with an AES II or other device with an RPM port.)

FrSky is continuously adding features and improvements to our products. To get the most from your product, please check the download section of the FrSky website www.frsky-rc.com for the latest update firmware and manuals