FS-iBS01

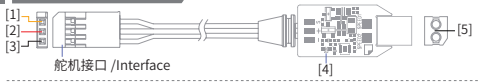
RPM Sensor (Optical Perception)

产品介绍 Introduction

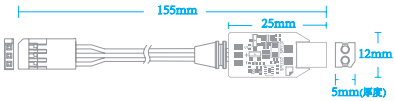
FS-iBS01 是一款采用 i-BUS2 协议适配富斯 AFHDS 3 增强版接收机的光感转速传感器。设计小巧，易安装，PPX6 级别防水，实时回传转速数据，转速测量精度 10RPM，适配多种模型使用。

FS-iBS01 is an optical perception sensor that adapts to Flysky AFHDS 3 enhanced version receiver in compliance with i-BUS2 protocol. It features compact design, easy installation, PPX6 waterproof, real time rotate speed data return, rotate speed measurement accuracy (10RPM), and adaption to a variety of models.

概览 Overview



尺寸 /Dimensions:



[1] S(信号脚)	[1] Signal Pin
[2] + (电源正极)	[2] + (Power Anode)
[3] -(电源负极)	[3] - (Power Cathode)
[4] LED 灯	[4] LED
[5] 光感探头	[5] Optical Perception Detection Element

产品规格 Product Specifications

- 产品型号：FS-iBS01
- 适配设备：支持 i-BUS2 协议系列接收机（如 FTr8B、FTr12B、INr6-HS 等富斯 AFHDS 3 增强版接收机）
- 适配模型：车、船、飞机等
- 协议类型：i-BUS2
- 测量精度：10RPM
- 测量范围：60 ~ 300000RPM
- 输入电源：3.5~9V/DC
- 工作电流：20mA/5V
- 在线更新：不支持
- 防水等级：PPX6
- 外形尺寸：155mm（长度）
- 机身重量：4.0g
- 温度范围：-20°C ~ +85°C
- 湿度范围：20% ~ 95%
- 认证：CE，FCC, UKCA

- **Product Model:** FS-iBS01
- **Compatible Devices:** The receivers with i-BUS2 protocol (such as FTr8B, FTr12B, INr6-HS and other Flysky AFHDS 3 enhanced version receivers)
- **Compatible Models:** Cars, boats, airplanes, etc.
- **Protocol:** i-BUS2
- **Measurement Accuracy:** 10RPM
- **Measurement Range:** 60 ~ 300000RPM
- **Input Power:** 3.5～9V/DC
- **Working Current:** 20mA/5V
- **Online Update:** No
- **Water Proof:** PPX6
- **Dimensions:** 155mm (Length)
- **Weight:** 4.0g
- **Temperature Range:** -20°C ~ + 85°C
- **Humidity Range:** 20% ~ 95%
- **Certifications:** CE, FCC, UKCA

安装说明 Installation

光感转速传感器安装说明

安装步骤如下：

1. 使用 3M 贴将本传感器固定在模型合适位置处 (如图），使光感探头与马达转子反光面垂直，注意固定的面需平整。也可使用扎带将其捆绑在模型上，注意力度，避免扎带勒坏产品；
2. 如图所示，将舵机接口连接至接收机 Newport 接口，在与此接收机对码的发射机端，将接收机对应的 Newport 接口协议设置为 i-BUS2，即可在发射机端查看相关信息。

注：

1. 将本传感器安装在靠近桨叶或马达转子的位置，且光感探头与与桨叶或转子间距离不超过 50mm 或 30mm（带遮光罩）；
2. 不同应用对线材长度要求不同，如需加延长线，请注意 FS-iBS01 接口为舵机接口，针脚定义参考前面【概览】描述。
3. 适配支持 i-BUS2 协议的发射机：Noble（固件版本V2.0.93 及以上）、Noble Lite（固件版本 V1.0.10 及以上）、Noble pro、PL18（固件版本 1.0.55 及以上）和 PL18 Lite（固件版本 1.0.65 及以上）；
4. 光感转速传感器正常工作时，LED 灯常亮；
5. 若光感转速传感器已连接电源但未检测到 i-BUS2 信号，此时 LED 灯慢闪。

遮光罩使用说明

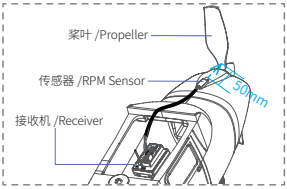
若在室外强光下使用本传感器，强烈的光线会导致本传感器测量出现误差，在此情况下，

Mounting Instruction

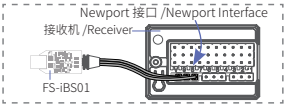
Follow the steps below to install:

1. Use 3M stickers to fix the optical perception sensor at the appropriate location of the model as shown in the figure. And make the optical perception detection element perpendicular to the reflective surface of the motor rotor. It should be noted that the fixed surface should be flat. You can also use a cable tie to tie it to the model. In this case, you should control the force.
2. Connect the servo interface to the Newport interface of the receiver as shown. Set the protocol of the corresponding Newport interface of the receiver to i-BUS2 at the transmitter side that has bound with this receiver. As a result, you can view the relevant information at the transmitter side.

安装示意图 /Installation Diagram



与接收机连接示意图 /Connection Diagram



Notes:

1. Install this sensor close to the blade or motor rotor. The distance between the optical perception detection element and the propeller or rotor is not more than 50 mm or 30 mm (with a light shield).
2. The cable length may vary to different applications. If you need to add an extension cable, please note that the FS-iBS01 interface is a servo interface, and for the pin definition, refer to the description in the previous Overview section.
3. The transmitters that support i-BUS2 protocol: Noble (firmware version V2.0.93 or later), Noble Lite (firmware version V1.0.10 or later), Noble pro, PL18 (firmware version 1.0.55 or later) and PL18 Lite (firmware version 1.0.65 or later).
4. If the optical perception sensor is working properly, the LED is solid on at this time.
5. If the optical perception sensor is connected to power supply but no i-BUS2 signal is detected, the LED flashes slowly at this time.

Instructions for Use of the Light Shield

If the sensor is used under strong outdoor light, the strong light will cause measurement errors of

FS-iBS01

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安装说明 Installation

需使用遮光罩。步骤如下：

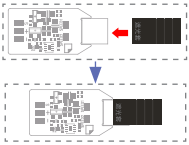
1. 确认遮光罩的合适长度，沿剪裁提示线剪掉多余部分；
2. 如图所示，将遮光罩包住光感探头。

注：

1. 遮光罩上有三条剪裁提示线，方便您裁剪不同的长度，以适配不同的应用；
2. 遮光罩长度越长效果越好，但同时需注意与被测物体间距离不能超过30mm。

the sensor. In this case, it is necessary to use the light shield. The details are as follows:

1. Measure and confirm the appropriate length of the light shield and cut off the excess along the cutting line.
2. Use the light shield to cover the optical perception detection element as shown in the figure.



Notes:

1. There are three cutting lines on the light shield for your choice to get appropriate length for different applications.
2. The longer the length of the light shield, the better the effect. However, the distance between the light shield and the object to be measured is not allowed to exceed 30mm.

注意事项：

- 为防止损坏光感转速传感器，请确保与接收机正确连接。
- 使用光感转速传感器前，请确保与接收机的 i-BUS2 接口相连。
- 请勿在电机旋转时触摸传感器。

Attentions:

- Ensure that the sensor is connected properly to the receiver, failure to do so may result in damage to the sensor.
- Ensure that the sensor is connected properly to i-BUS2 interface of the receiver before use.
- Do not touch a sensor during engine motor rotation.

认证相关 Certifications

FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Warning: changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
– Reorient or relocate the receiving antenna.
– Increase the separation between the equipment and receiver.
– Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
– Consult the dealer or an experienced radio/TV technician for help.

EU DoC Declaration

Hereby, [Flysky Technology Co., Ltd.] declares that the Radio Equipment [FS-iBS01] is in compliance with RED 2014/53/EU.
The full text of the EU DoC is available at the following internet www.flyskytech.com/info_detail/10.html.

Environmentally Friendly Disposal

The distance between user and products should be no less than 20cm.

UKCA Compliance Statement

Satisfies all the technical regulations applicable to the product within the scope of UK Radio Equipment Regulations (SI 2017/1206); UK Electrical Equipment (Safety) Regulations (SI 2016/1101); and UK Electromagnetic Compatibility Regulations (SI 2016/1091).

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