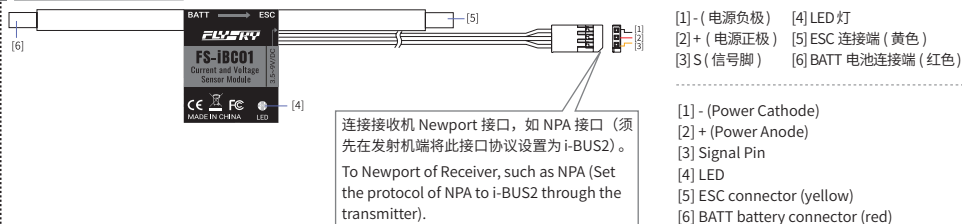


产品介绍 Introduction

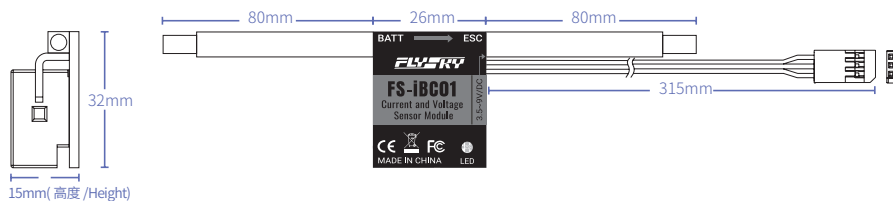
FS-iBC01 是一款采用 i-BUS2 协议适配富斯 AFHDS 3 增强版接收机的电流电压传感器。本传感器可实时回传电调设备的电压、电流及电池实际消耗容量等信息。其体积小，易安装，可适配多种模型使用。

FS-iBC01, in compliance with i-BUS2 protocol, is a current and voltage sensor adapted to FlySky AFHDS 3 enhanced version receivers. The sensor can transfer back the information such as the voltage, current and actual battery consumption capacity of the ESC in real time. With small size, it is easy to install and adaptable to a wide range of models.

概览 Overview



尺寸示意图 / All dimensions are shown as below.



产品规格 Product Specifications

- 产品型号: FS-iBC01
- 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)
- 适配机型: 车、船、飞机等
- 协议类型: i-BUS2
- 输入电源: 3.5~9V/DC
- 测量电流: 0.5~400A (100~200A 持续小于 15 秒, >200A 持续小于 5 秒)
- 测量电压: 0~100V
- 测量容量: 0mAh~32767mAh
- 电压测量误差: +/- 0.1V
- 电流测量误差: 0.5~100A: <0.5A; 100~200A: <1A; 200~400A: <1%
- 在线更新: 不支持
- 机身重量: 51g
- 温度范围: -20°C ~ +85°C
- 湿度范围: 20% ~ 95%
- 安规认证: CE, FCC
- Product Type: FS-iBC01
- 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
- Input Power: 3.5~9V/DC
- Current Measurement Range: 0.5~400A (100~200A within 15 seconds, >200A within 5 seconds)
- Voltage Measurement Range: 0~100V
- Measurement Capacity: 0mAh~32767mAh
- Voltage Measurement Error: +/- 0.1V
- Current Measurement Error: 0.5~100A: <0.5A; 100~200A: <1A; 200~400A: <1%
- Online Update: None
- Weight: 51g
- Temperature Range: -20°C ~ +85°C
- Humidity Range: 20% ~ 95%
- Certifications: CE, FCC

安装与接线 Installation and Cable Connecting

电流电压传感器接线说明

本传感器出厂时，不包含电池接口，选择合适的电池接口后须自行焊接。焊接时，注意接口正负极方向。

Cable connecting instructions for the current and voltage sensor

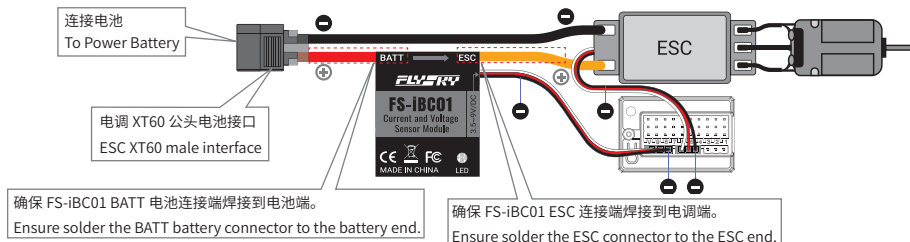
This sensor is delivered without a battery interface. Therefore, you need to select a suitable battery interface and solder it yourself. Check the positive and negative terminals carefully when soldering.

安装与接线 Installation and Cable Connecting

以下示意图以 XT60 电池接口为例 (可根据具体电池接口选择相应的接口)。确保 FS-iBC01 传感器是连接在正极连接线上 (示意图里正极线标识 ⊕)。
The cable should be connected as shown in the following diagrams, taking XT60 battery as an example (You can select the appropriate interface for your specific battery interface. Make sure that the FS-iBC01 sensor is located on positive cable (The positive cable is marked ⊕ in diagrams below).

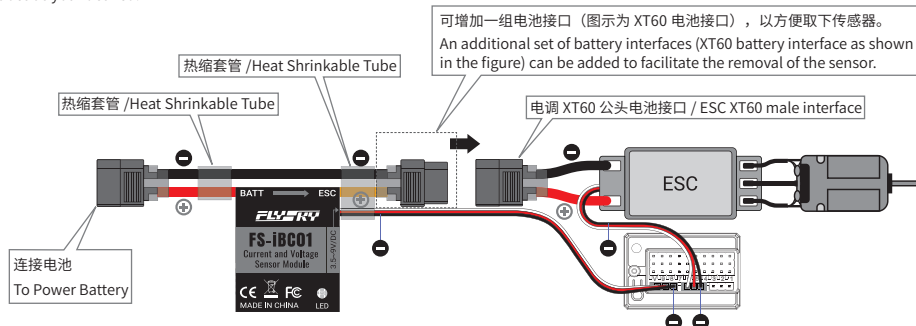
接线方式一 (传感器不可取下): 此示意图以连接带有 XT60 接口的电调为例, 先将传感器焊接到电调正极线 (红线), 注意传感器的 BATT 电池连接端 (红色线) 焊接到 XT60 端, 而传感器的 ESC 连接端 (黄色线) 则焊接到电调端。再将传感器和电调的杜邦接口分别与接收机 Newport 相连接。

Cable connecting method I (sensor not removed): Refer to the following diagram, taking the ESC as an example which has a XT60 interface. Firstly, solder the sensor to the ESC positive cable (red cable), the BATT battery connector of the sensor (red cable) is soldered to the XT60 end, while the ESC connector of the sensor (yellow cable) is soldered to the ESC end. Secondly, connect the dupont interfaces of the sensor and the ESC to the Newport of the receiver respectively.



接线方式二 (传感器可取下), 根据需要可增加一组电池接口, 同时也可以选择是否使用热缩套管:

Cable connecting method II (sensor removed): Add a set of battery interfaces as required. Additionally, choose whether to use heat shrinkable tubes as your desired.



电流电压传感器安装说明

电流电压传感器安装步骤如下:

1. 使用 3M 贴将本传感器固定在模型合适位置处, 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. 依照接线示意图完成连线;
3. 将杜邦头接口连接到接收机 Newport 接口, 在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信息并设置相关功能。

注:

1. 不同应用对线材长度要求不同, 如需加延长线, 请注意 FS-iBC01 接口为杜邦头接口, 引脚定义参考前面【概览】描述;
2. 适配 Noble pro 发射机 (固件版本 1.0.3 及以上版本);
3. 当电压电流传感器正常工作时, LED 灯常亮;
4. 若电压电流传感器已连接电源但未检测到 i-BUS2 信号, 此时 LED 灯慢闪。

Mounting Instruction

Follow the steps below to install:

1. Use 3M stickers to fix the sensor at an appropriate location of the model. 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. Finish cable connecting according to the cable connecting diagrams as shown above.
3. Connect the Dupont interface to the Newport interface of the receiver as shown above. Then 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 and set the functions at the transmitter side.

Notes:

1. The cable length may vary to different applications. If you need to add an extension cable, please note that the FS-iBC01 interface is a Dupont interface, and for the pin definition, refer to the description in the previous Overview section.
2. Adapts Noble pro transmitter (Firmware version 1.0.3 or later).
3. If the sensor is working properly, the LED is solid on at this time.
4. If the sensor is connected to power supply but no i-BUS2 signal is detected, the LED flashes slowly at this time.

功能介绍 Function Instruction

本传感器可实时回传电调设备的电压、电流、电池实际消耗容量、运行时间、极值（最大最小电压和最大电流）及平均电流信息。可在发射机端查看相关信息。默认状态下，本传感器即时保存相关数据。相关功能可在发射机端设置：

- **清零传感器数据**
包括最大最小电压、最大电流、平均电流、电池消耗容量和运行时间。
- **校准电压**
监测到的电压与电池实际电压可能存在压差，可通过此功能设置一个校准系数，让监测的电压与实际电池电压更接近。
- **通电自动清除数据**
设置是否开启 [通电自动清除数据] 功能，默认关闭。若开启功能，则传感器在通电后即清除之前存储的数据，包括最大最小电压、最大电流、平均电流、电池消耗容量和运行时间。重新记录数据；若设置关闭，则基于之前存储的数据继续增加数据。

注：具体设置参考相关发射机说明书。

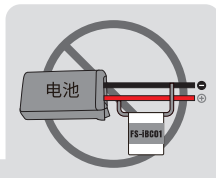
The sensor transfers back the information such as voltage, current and actual battery consumption, run time, limit values (maximum/minimum voltage and maximum current), and average current of the ESC in real time. You can view the information on the transmitter side. In its default state, the sensor saves data instantly. Relevant functions can be set at the transmitter side:

- **Clearing of Sensor Data**
This includes the maximum/minimum voltage, maximum current, average current, battery consumption capacity, and run time.
- **Calibration of Voltage**
There may be a voltage difference between the monitored voltage and the actual battery voltage. A calibration factor can be set with this function to bring the monitored voltage closer to the actual battery voltage.
- **Automatic Data Clearing Upon Power-on**
Set whether to enable the function of automatic data clearing upon power-on. By default, it is disabled. If the function is enabled, the sensor clears the previously stored data upon power-on, including maximum/minimum voltage, maximum current, average current, battery consumption capacity, and run time. Record data again. If the setting is disabled, data continues to be added based on the previously stored data.

Note: Refer to the transmitter manual for related settings.

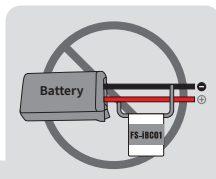
⚠ 注意事项:

- 使用本传感器前，请确保与接收机的 i-BUS2 接口相连。
- 确保正确连接接口正负极！如果连接错误，可能会发生爆炸或引起火灾。
- 确保各接口连接牢固！若在使用过程中接头脱落，则会导致模型失控，并带来严重的危险。
- 请确保本传感器安装在远离磁性物体的地方。
- 不要将本传感器安装在易燃的位置，否则将导致起火。
- 小心电池过度放电。
- 确保电流不超过测量范围，否则将烧坏传感器。
- 禁止将本传感器的 ESC 连接端和电池连接端直接连接电池的正负极，否则将导致起火。



⚠ Attentions:

- Ensure that the sensor is connected properly to i-BUS2 interface of the receiver before use.
- Ensure that the positive and negative connectors of the interface are correctly connected! If connected incorrectly, an explosion or fire may occur.
- Make sure that the connectors of all interfaces are connected securely! If the connectors fall out during use, the model may be out of control, resulting in a danger.
- Make sure that this sensor is installed away from magnetic objects.
- Do not install this sensor in a flammable location. Otherwise, there may be a fire.
- Check carefully whether the battery is over-discharged.
- Make sure that the current does not exceed the measurement range. Otherwise, the sensor may be damaged.
- Never connect the sensor to a battery directly. Otherwise, there may be a fire.



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-iBC01] 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

Old electrical appliances must not be disposed of together with the residual waste, but have to be disposed of separately. The disposal at the communal collecting point via private persons is for free. The owner of old appliances is responsible to bring the appliances to these collecting points or to similar collection points. With this little personal effort, you contribute to recycle valuable raw materials and the treatment of toxic substances.



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