Futaba P-SBS/02G

Futaba SBS-02G GPS Telemetry Sensor User Manual

Model: P-SBS/02G | **Brand:** Futaba

1. Introduction

The Futaba SBS-02G is a versatile, small, and compact telemetry sensor designed for use with Futaba S.Bus2 compatible receivers and transmitters. This sensor provides crucial flight data, including altitude, variometer readings, GPS-derived speed, distance, and position information, enhancing your remote control experience with real-time feedback.
It integrates seamlessly into your telemetry system, offering precise measurements for various flight parameters. The pressure sensor delivers variometer and altitude data, while the GPS sensor provides distance, speed, and positional data.

2. Safety Precautions

Please read and understand these safety precautions before using the SBS-02G sensor to ensure safe operation and prevent damage to the product or other equipment.

- **Power Supply:** Ensure the operating voltage is within the specified range of 3.7V to 8.4V. Incorrect voltage can damage the sensor.
- **Connection:** Always connect the sensor to the S.Bus2 input on your telemetry receiver. Incorrect wiring can lead to malfunction.
- **Environment:** Avoid exposing the sensor to extreme temperatures, moisture, dust, or direct sunlight. Operate in a clean, dry environment.
- **Handling:** Handle the sensor with care. Do not drop it or subject it to excessive vibration or shock.
- **Modifications:** Do not attempt to open, modify, or repair the sensor. Unauthorized modifications will void the warranty and may cause damage.
- **Interference:** Keep the sensor away from strong magnetic fields or other sources of electronic interference that could affect GPS signal reception.

3. Package Contents

The Futaba SBS-02G GPS Telemetry Sensor package typically includes:

- Futaba SBS-02G GPS Telemetry Sensor
- Instruction Manual (this document)

Note: Contents may vary slightly depending on the region or specific product bundle.

4. Setup and Installation

Follow these steps to properly set up and install your Futaba SBS-02G sensor:

1. **Mounting:** Securely mount the SBS-02G sensor in your model. Choose a location that is free from excessive vibration and allows for clear reception of GPS signals (e.g., not completely enclosed by carbon fiber or metal). Ensure the sensor is oriented correctly as per your model's requirements.
2. **Connection to Receiver:** Connect the sensor's cable to the S.Bus2 input port on your Futaba telemetry receiver. Ensure the connector is fully inserted and correctly oriented to avoid damage.
3. **Power Supply:** The sensor draws power directly from the S.Bus2 connection. Ensure your receiver system provides a stable power supply within the sensor's operating voltage range of 3.7V to 8.4V.
4. **Transmitter Compatibility:** The SBS-02G sensor is compatible with the following Futaba transmitters: T10J, T12K, T14SG, FX22, FX32, FX36, T16SZ, T18SZ, T18MZ. The new Version 2 offers 10x greater precision with T18MZ, T18MZWC, T16SZ, T18SZ, and FX36 transmitters.
5. **Initial Setup:** Once connected and powered on, your transmitter should automatically detect the sensor. Refer to your transmitter's manual for specific instructions on how to display and log telemetry data from the SBS-02G.

Figure 1: Futaba SBS-02G GPS Telemetry Sensor with its connection cable. This image shows the compact black casing of the sensor with the "SBS-02G Futaba" logo clearly visible, and the attached three-wire connector for S.Bus2 integration.

5. Operating Instructions

The SBS-02G sensor operates automatically once connected to a compatible S.Bus2 receiver and transmitter. The data it collects is transmitted in real-time to your Futaba telemetry-enabled transmitter.

5.1. Data Provided by the Sensor

- **Variometer (Vario):** Measures the rate of climb or descent.
  - Measurement Range: -150 m/s to +150 m/s
  - Resolution: Approximately 10-100 cm/s (depending on the transmitter)
- **Altitude:** Measures the current height above a reference point.
  - Measurement Range: -700 m to +5500 m
  - Resolution: 0.1-1 m (depending on the transmitter)
- **Speed (GPS):** Measures the ground speed of your model.

    - Measurement Range: 0 to 500 km/h
- **Distance (GPS):** Measures the distance traveled from a starting point.
    - Measurement Range: 0 to 5000 m
- **Position (GPS):** Provides real-time geographical coordinates.

5.2. Viewing Telemetry Data

Refer to your Futaba transmitter's instruction manual for detailed information on how to:

- Display real-time telemetry data on the transmitter screen.
- Set up alarms for specific telemetry values (e.g., low altitude, high speed).
- Log telemetry data for post-flight analysis.
- Calibrate or reset sensor values if applicable.

6. Maintenance

The Futaba SBS-02G sensor is designed for durability and requires minimal maintenance. Adhere to the following guidelines to ensure its longevity and optimal performance:

- **Cleaning:** Gently wipe the sensor's exterior with a soft, dry cloth. Do not use solvents, alcohol, or abrasive cleaners.
- **Storage:** When not in use, store the sensor in a cool, dry place, away from direct sunlight and extreme temperatures.
- **Inspection:** Periodically inspect the sensor's cable and connector for any signs of wear, fraying, or damage. Replace if necessary.
- **Environmental Protection:** Protect the sensor from water, moisture, and excessive dust, which can impair its functionality.

7. Troubleshooting

If you encounter issues with your Futaba SBS-02G sensor, consider the following troubleshooting steps:

- **No Telemetry Data:**
    - Ensure the sensor is correctly connected to the S.Bus2 port on your receiver.
    - Verify that the receiver is powered on and functioning correctly.
    - Check your transmitter's telemetry settings to ensure the sensor is recognized and enabled.
    - Confirm your transmitter is compatible with the SBS-02G sensor.
- **Inaccurate GPS Data (Speed, Distance, Position):**
    - Ensure the sensor has a clear, unobstructed view of the sky for optimal GPS signal reception. Avoid mounting it under carbon fiber or metal parts.
    - Allow sufficient time for the sensor to acquire GPS satellites after power-up. This may take a few minutes.
    - Test the sensor in an open outdoor area, away from tall buildings or dense foliage that could block GPS signals.
- **Inaccurate Vario/Altitude Data:**
    - Ensure the pressure sensor port (usually a small hole on the casing) is not blocked by dirt, debris, or mounting material.

- Rapid changes in air pressure due to weather can affect altitude readings.

- **Intermittent Data:**
  - Check all connections for looseness or damage.
  - Ensure the operating voltage is stable and within the specified range.
  - Minimize sources of electrical interference near the sensor or receiver.

If problems persist after following these steps, please contact Futaba customer support or your local dealer for further assistance.

8. Specifications

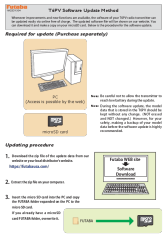
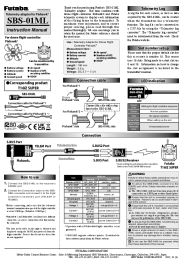
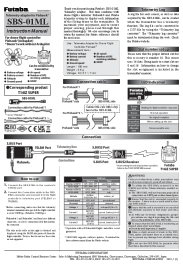
Feature	Specification
Model Number	P-SBS/02G
Dimensions (approx.)	45 x 30 x 15 mm
Weight (approx.)	11 g
Operating Voltage	3.7V - 8.4V
Current Consumption (approx.)	100 mA
Vario Measurement Range	-150 m/s to +150 m/s
Vario Resolution	Approx. 10-100 cm/s (transmitter dependent)
Altitude Measurement Range	-700 m to +5500 m
Altitude Resolution	0.1-1 m (transmitter dependent)
Speed Measurement Range	0 - 500 km/h
Distance Measurement Range	0 - 5000 m
Interface	S.Bus2
Compatible Transmitters	T10J, T12K, T14SG, FX22, FX32, FX36, T16SZ, T18SZ, T18MZ, T18MZWC

9. Warranty and Support

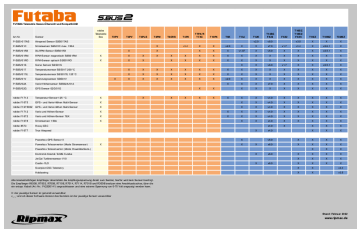
Futaba products are manufactured to high quality standards. For warranty information, please refer to the warranty card included with your product or visit the official Futaba website. Keep your proof of purchase for warranty claims.
For technical support, troubleshooting assistance beyond this manual, or spare parts inquiries, please contact your local Futaba dealer or the official Futaba customer support channels. Contact information can typically be found on the Futaba website or on the product packaging.
Online Resources:

- Futaba Official Website (for product updates, FAQs, and support)
- Futaba Service & Support (example link, actual link may vary)

Related Documents

	Futaba T6PV Software Update Method and Version Check Guide Comprehensive guide to updating the Futaba T6PV radio transmitter software, checking versions of T6PV and compatible receivers/gyros, and details on new features like tilt mixing and GPS compatibility.
	Futaba SBS-01ML Telemetry Adapter Instruction Manual Instruction manual for the Futaba SBS-01ML Telemetry adapter, detailing its use with the Pixhawk drone flight controller and Futaba telemetry system for displaying flight information on the transmitter.
	Futaba SBS-01ML Telemetry Adapter for Pixhawk Instruction Manual Instruction manual for the Futaba SBS-01ML telemetry adapter, designed for Pixhawk drone flight controllers. Provides details on setup, connection, telemetry logging, LED indicators, and usage with Futaba transmitters like the T16IZ SUPER.
	Futaba T6K-V3S: Key Software Updates and Features Guide This document supplements the original instruction manual for the Futaba T6K-V3S radio control transmitter, detailing significant software updates and introducing new functionalities for enhanced operational control.

Documents - Futaba – P-SBS/02G



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FUTABA Telemetrie Sensor-bersicht und Kompatibilitt Art.Nr. P-SBS-01TAS P-SBS/01C P-SBS/01RB P-SBS/01RM P-SBS/01RO P-SBS/01S P-SBS/01T P-SBS/01TE P-SBS/01V P-SBS/02A **P-SBS/02G** Sensor Airspeed Sensor SBS01TAS Stromsensor SBS01C max. 150A BL-RPM-Sensor SBS01RB RPM-Sensor magnetisch SBS01RM RPM-Senso...

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