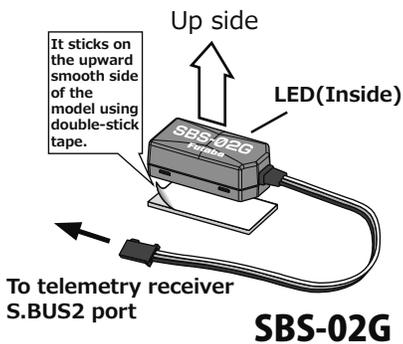# Futaba®

Telemetry GPS sensor

SBS-02G

Instruction Manual

Thank you for purchasing Futaba's SBS-02G GPS sensor. This sensor, used in conjunction with a telemetry enabled transmitter/receiver, is used to indicate the distance/speed/altitude of the item to which it is attached. To maximize your enjoyment, and to ensure proper sensing, please read through this manual thoroughly. We also encourage you to retain the manual for future reference should the need arise.

● **The SBS-02G is designed for use with Futaba telemetry systems.**

Up side

It sticks on the upward smooth side of the model using double-stick tape.

LED(Inside)

To telemetry receiver S.BUS2 port

SBS-02G

Use：GPS/Altitude sensor (from atmospheric pressure) with Vario meter
Range：
[Speed] About 0km/h~500km/h (~311mph)
[Altitude] About -700m~+5,500m
 (-766yard~+6015yard)   ---sensor spec
[Vario meter] About -150m/s~+150m/s
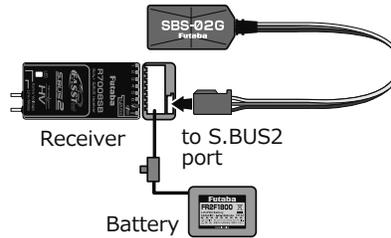 (-336mph~+336mph)
Length：175mm
Weight：11g
Voltage：DC 3.7V ～ DC 7.4V
Frequency：1575.42 MHz

*The using of **SBS-01G** and **SBS-02G** is common. It's sometimes indicated on the manual of the transmitter with **SBS-01G**, **SBS-02G** can be used by the same way.

Wiring

The SBS-02G may only be used with telemetry enabled receivers that offer S.BUS 2 port. Please refer to the manual(s) that accompanied your transmitter and/or receiver for proper connection methodology.

Receiver   to S.BUS2 port

Battery

Relative distance/altitude

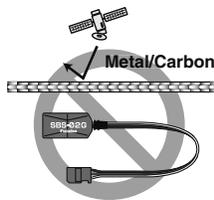Data when a power supply is turned on shall be 0m, and it displays the distance/altitude which changed from there.
Even if the altitude of your airfield is high, it will start at 0m and the altitude difference from the airfield is displayed.

⚠WARNING

Failure to follow these safety precautions may result in severe injury to yourself and others.

❗ **To utilize the SBS-02G GPS sensor, connect it to the S.BUS2 port of the Futaba telemetry enabled receivers.**
・The SBS-02G will not function properly if connected to an S.BUS port or other channel ports.

❗ **Ensure that the unit is connected properly to the receiver. Failure to do so could result in damage to the sensor.**

🚫 **Do not use the SBS-02G with anything other than an R/C model.**

❗ **Always use the supplied sensor mounting double-stick tape to attach the sensor to the mechanics.**
・As with any electronic components, proper precautions are urged to prolong the life and increase the performance of the SBS-02G.

❗ **Ensure that the unit is mounted in an area that will eliminate exposure to fuel, water and vibration.**
・As with any electronic components, proper precautions are urged to prolong the life and increase the performance of the SBS-02G.

❗ **To ensure that the SBS-02G is functioning as desired, please test accordingly.**
・Do not fly until inspection is complete.

❗ **Allow a slight amount of slack in the SBS-02G cables and fasten them at a suitable location to prevent any damage from vibration during flight.**

Slot number setup

Please note that the proper default slot for this accessory is number 8 (8-15). This sensor uses eight slots. Being made to a start slot are 8, 16, and 24. Information on how to change the slot assignment is included in the transmitter's manual.

LED Indication

Green	Normal operation
Green blink	GPS un-receiving
Red	No signal reception
Green/Red	When setting up the slot
Green/Red Alternate blink	Unrecoverable error

Location

SBS-02G computes position and speed from GPS. It is not recommended to be used in an indoor flying environment. Moreover, it may not be able to the flight posture of a model (inverted etc.). This sensor calculates the altitude from atmospheric pressure and temperature. Atmospheric pressure will get lower as you go up in altitude, using this the sensor will estimate the altitude. An exact display cannot be performed if atmospheric pressure and temperature changes a weather. A short time is required until the positioning of the GPS is established. In the meantime, don't move the model during this process.

Indicated Altitude

Improvement of measurement accuracy. (Compared to our SBS-01G) Resolution of altitude in 0.1 m increments.

T18MZ-WC(V2.8-) T18MZ(V2.8-) T18SZ(V3.0-) T16SZ	Other transmitters
0.0ft	0ft
Indicated below the decimal point	It isn't indicated below the decimal point

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Accuracy

A little inaccuracy is shown in the display of distance or speed. Even if the model started at 0m returns to the same place, it may not be displayed as 0m.

Mounting Precautions

Do not install in a location where the wind/air flow can hit the sensor. Also, do not put in a sealed location where atmospheric pressure will not change in a sealed location. Moreover, the thing which interrupts an electric wave must not be above a sensor (metal, carbon).
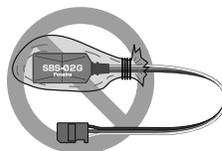

Metal/Carbon

Nothing that interrupts an electric wave must be above the upper part of a sensor.

It is not recommended to be used in an indoor flying environment.

Wind

Do not install in a location where the wind/air flow can hit the sensor.

Do not put in a sealed location.

ID number

There is an ID number in SBS-02G. ID will be unnecessary if one GPS sensor is carried in a model. ID is needed if there is a schedule which carries two or more GPS sensors in one set of on model. However, the ID number is indicated at the bottom of SBS-02G.

Speed alarm precaution

Since the GPS speed sensor displays the ground speed, it cannot be used as a stall alarm. For example, an aircraft that stalls at 50km/h will stall if the tailwind is 5km/h or greater even through 55km/h is displayed by ground speed. In addition, with an aircraft that will disintegrate in midflight at 400km/h at an over-speed alarm, when the headwind reaches 30km/h the airplane will disintegrate in midair due to over speeding even at a ground speed of 370km/h.

Compliance Information Statement (for EU)

Declaration of Conformity
Hereby, Futaba Corporation declares that the radio equipment type SBS-02G is in compliance with Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at the following internet address:

http://www.rc.futaba.co.jp/english/dl/declarations.html