

ROT. SENSOR-M

TELEMETRY ROTATION SENSOR

取扱説明書

OPERATION MANUAL

このたびは、弊社製品お買い上げいただき誠にありがとうございます。

本製品を正しく安全にご使用いただくためにも取扱説明書を必ずお読みください。

特徴

- ・磁気を検知する非接触回転検出方式。
- ・強力なサマリウムコバルト磁石を採用。センサ部との距離が離れても回転が検出でき設置が容易。
- ・センサ部が信号処理部と独立した小型設計。
- ・回転検出時の動作確認が可能なLEDを搭載。

構成

- センサ本体 ● ネオジウム磁石 ● 取扱説明書

安全にご使用いただくために必ずお守りください。

使用者もしくは第三者への危害・財産への損害を未然に防止するため必ずお守りいただくことを次のように表示します。

お守りいただく内容を、次の表示で区分し説明します。

⚠	この表示で「注意事項」を説明します。
ⓘ	この表示で「義務事項」を説明します。
🚫	この表示で「禁止事項」を説明します。

△ 定格電圧以外で使用すると、回転センサーの誤検出や破損の原因となります。

△ 磁石とセンサは確実に固定してください。振動等の影響で、センサと磁石が接触すると破損の原因となります。

△ センサからのハーネスの固定も確実にしてください。ハーネスが絡まって事故の原因となる可能性があります。

△ 飛行中は電池残量に十分注意してください。電池残量が少ないと誤検出する場合があります。

○ 機体側に取り付ける磁石は付属のものをご使用ください。

○ 分解、改造等をしないこと。

○ 水に濡らさないこと。結露の生じる環境では使用しないこと。

● 被覆チューブ、リード線やコネクタにキズがついた場合は使用しないこと。

仕様

品番：ROT.SENSOR-M

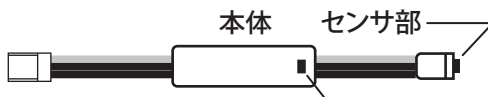
検出方式：磁気検出方式（ホールIC）

検出範囲：300rpm～40,000rpm

磁石寸法：Φ4mm x 2mm

動作電圧：4.0V～8.5V

センサーについて



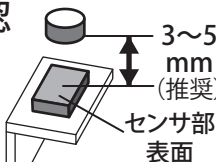
回転検出確認用LED

★磁石がセンサ上を通過するとLEDが点滅します。

【磁石との推奨距離範囲】3～5mm
上記範囲で設置してください。

磁石の極性確認

センサを受信機に接続し磁石を近づけLEDが点灯する面を確認してください。ケーブル側▼



動作確認および注意事項

- ① 右図を参考にしてセンサを接続します。
- ② 受信機の電源をONにすればセンサは通信を開始します。
- ③ 磁石を取り付けたプロペラあるいはメインギアを手で回してLEDの点灯を確認します。

取付けた磁石がセンサを通過する際LEDが点灯します。磁石を取り付けた部分を何度か回転させ確認してください。

【送信機の設定を確認】

送信機のシステムリスト[TELEMETRY]内「RPM」の項目で設定をしてください。

● ヘリのギヤに取付けた場合

> GEAR RATIO

● 飛行機のプロペラに取付けた場合

> PROPELLER : 2

※送信機の説明書をご参照ください。

設置方法

1 磁石を機体側に瞬間接着剤などでしっかりと固定します。

▶ 磁石には極性があります。センサのLEDが点灯する面を確認して固定してください。

▶ 磁石の固定には十分な硬化時間をおいてください。

▶ ヘリ（エンジン機）の場合はクラッチベルに直接固定可能です。（右下図参照）

2 センサICを磁石付近（推奨距離3mm～5mm）に垂直に固定します。

▶ 振動でずれないようにしっかりと固定してください。

3 本体側も機体にしっかりと固定してください。

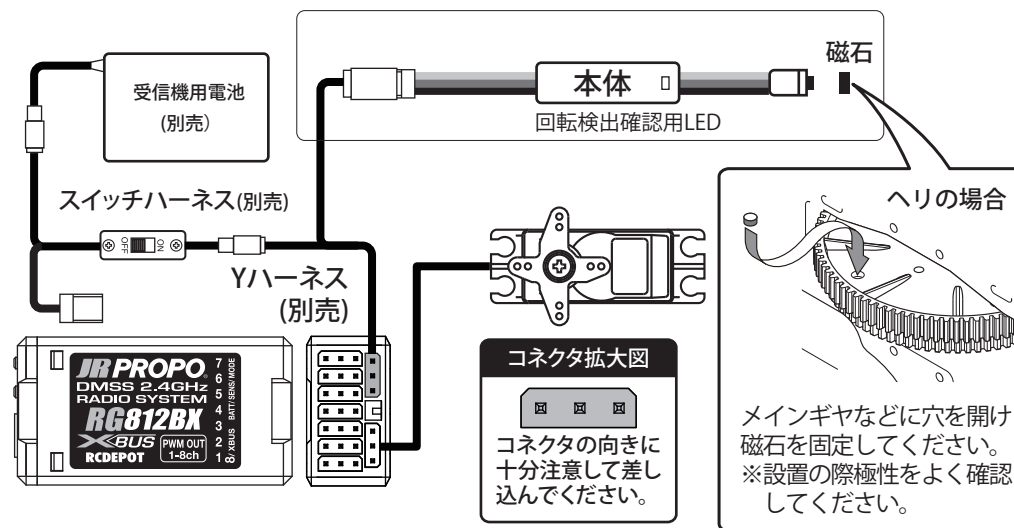
▶ センサICおよび本体のハーネスが回転部分に干渉しないようしっかりと固定してください。

4 本体固定後にコネクタを受信機のSENS端子（またはDATA端子）に接続します。

▶ センサを1種類のみ接続する場合バッテリーは受信機の空チャンネルに接続することで通信が可能です。センサ本体は必ずSENS端子に接続してください。

▶ センサを複数使用する場合はYハーネスやパワーハブを使用して接続してください。

■ RG812BXの接続例 ● BATT/SENS/MODE端子に接続してください。



■ 上手く動作しない場合 ★以下の点をご確認ください。

● テレメトリーが表示されない場合

- ・ 磁石の極性を確認
- ・ 磁石とセンサーの距離が離れ過ぎていないか確認
- ・ コネクタが受信機のSENS端子に接続されているか確認

● 数値が正確に表示されない場合

- ・ 送信機の設定を確認 SYSTEM>TELEMETRY>RPM

■ 修理アフターサービスに関するお問合せ

【RC DEPOT ラジオサービスセンター】TEL : 04-7157-0159

man-TLS-ROT-M

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ROT. SENSOR-M

TELEMETRY ROTATION SENSOR

OPERATION MANUAL

Thank you for purchasing this product.
To allow correct and safe use of this product, please read this operation manual.

FEATURES

- Uses a non-contact rotation detection system that detects magnetism.
- Utilizes powerful samarium-cobalt magnets, which allow rotation to be detected even when the magnets are separated by a distance from the sensor unit to enable easy installation.
- The sensor unit has a small-sized design that is independent from the signal processing unit.
- Incorporates an LED that allows operation to be confirmed during rotation detection.

ITEMS INCLUDED

- Main Unit and Sensor
- Operation Manual
- Neodymium magnet (1)

For your safety, be sure to observe the following points.

In order to protect against injury to users or third parties, or damage to property, please observe the following.

The information is divided and explained using the following symbols.

	"Caution Items" are explained using this indication.
	"Obligatory Items" are explained using this indication.
	"Prohibited Items" are explained using this indication.

- ⚠ Usage at a voltage other than the rated voltage will cause mistaken detection or damage to the rotation sensor.
- ⚠ Securely fix the magnets and sensor. In the situation where the sensor and magnets come into contact due to the influence of vibration, damage will be caused.
- ⚠ Also securely fix the harness coming from the sensor. It is possible that the harness will become caught, causing accidents.
- ⚠ Pay adequate attention to the remaining battery amount during flights. When the remaining battery amount becomes low, there may be cases where mistaken detection occurs.
- 🚫 Only use the magnets included with this product.
- 🚫 Do not disassemble or modify the product.
- 🚫 Do not get the product wet with water. Do not use the product in environments where condensation occurs.
- ⚠ Do not use any component which has been damaged, included wires or connectors.

SPECIFICATIONS

Product Number: ROT.SENSOR-M
Detection System:
Magnetic Detection System (Hall IC)
Detection Range: 300rpm ~ 40,000rpm
Magnet Dimensions: Φ 4mm x 2mm
Operating Voltage: 4.0V ~ 8.5V

CONFIGURATION



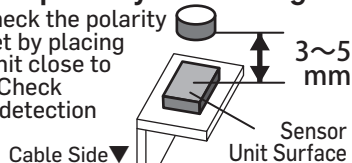
Rotation Detection LED

* When the magnets pass over the sensor, the LED will flash.

Recommended range of distance between the sensor and magnets **3 to 5mm**
To carry out reliable detection, it is recommended to install the items within the range described above.

Check the polarity of the magnet

Be sure to check the polarity of the magnet by placing the sensor unit close to the magnet. Check whether the detection LED flashes or not.



Operation Confirmation and Cautions

- ① Connect the Sensor referring to the diagram on the right.
- ② Switch on the receiver power. The Sensor will start communicating.
- ③ Manually rotate the propeller or main gear that the magnets are mounted on and confirm that the LED switches on and off.

The detection LED should flash when the magnet passes through the sensor unit. Rotate the item a few times to see if the detection LED will flash.

On your transmitter, check the telemetry settings via the System list. Be sure to set the "RPM" in the telemetry menu properly.

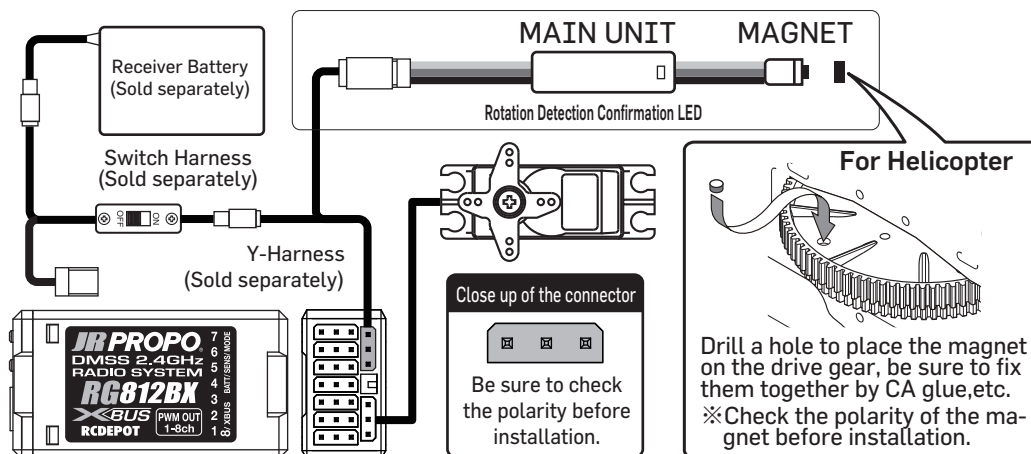
Refer to following settings dependent on the type of rotating object; such as a helicopter's main drive gear of gear ratio or at the Airplane's (PROPELLER:2) on the drive washer
Check the transmitter's instruction manual for further details.

INSTALLATION METHOD

- 1 Securely fix the magnets to the aircraft using instant adhesive.
 - ▶ The magnets have polarity. Fix the magnets so that their white painted surface is located on the opposite side from the sensor.
 - ▶ Allow an adequate adhesive hardening time for fixing the magnets.
 - ▶ For gas powered helicopter, it may be possible to fix the magnets directly to the clutch bell.
- 2 Fix the sensor IC perpendicular and close to the magnet (Recommended distance: 3mm to 5mm).
 - ▶ Securely fix the sensor so that it will not be displaced by vibration.
- 3 Also securely fix the main unit to the aircraft body.
 - ▶ Firmly fix the sensor IC and main unit harnesses so that they will not become caught up in the rotating parts.
- 4 After fixing to the main unit, connect the harness from the Sensor to the SENS terminal of the receiver.
 - ▶ Use a Y harness for making the connection.
 - ▶ In the situation where only one type of sensor is connected, communications will be possible by connecting the battery to a spare channel on the receiver. Be certain to directly connect the sensor main unit to the SENS terminal.

Example of connection to the RG812BX Receiver.

Insert the sensor plug to the "BATT/SENS/MODE" terminal slot.



In cases where the sensor does not work properly, check the following items.

- If the RPM sensor data does not appear on the screen, check the following issues.
- Check the polarity of the magnet
 - Check the distance between the magnet and sensor unit.
- If the RPM sensor data not accurately appear on the screen, check the following settings.
- Check the transmitter setting of the followings: SYSTEM>TELEMETRY>RPM
 - Be sure the gear ratio is set the proper numerical values, etc....

INFORMATION

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 to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
NOTE: 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:
1. Reorient or relocate the receiving antenna. 2. Increase the separation between the equipment and receiver. 3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. 4. Consult the dealer or an experienced radio/TV technician for help. This device complies with Industry Canada Licence-exempt R55-210. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.