

Gyro Sensor

Part Photo

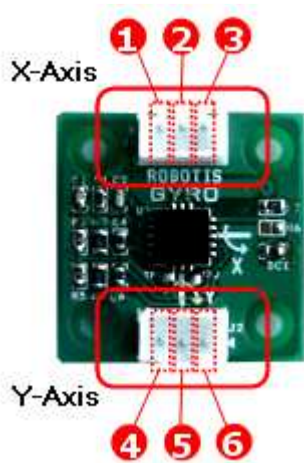


[Gyro Sensor]

Product Usage

- Measures angular velocity.
- Calculates which side the robot is tilted or is getting more power.
- Maintains the robot's balance and can be used for other movement applications.

Pin Layout Information



[X Axis Pin]

1. ADC : Outputs the angular velocity into analog signals.
2. GND
3. VCC (5V)

[Y Axis Pin]

4. VCC (5V)
5. GND
6. ADC : Outputs the angular velocity value into analog signals.

Analog Signal Output in Regards to Sensor's Environment

Output Value	455		250		45
Angular Velocity	+300 °/s	←	0 °/s	→	-300 °/s
Voltage Value	2.23 V		1.23 V		0.23 V

(Standard VCC Voltage Value is 5V.)

- When the angular velocity is 0 (when still), the output value is approximately 250. When it suddenly turns to one axis, the max value output is 455 and the minimum 45, showing a 300 °/s angular velocity. Here the mark or sign represents direction.
- Depending on the temperature, there may be 1% difference.
- There may be a difference in value depending on the standard VCC voltage value and circuit noise. Thus, we recommend to average several values before use.

(When sampling, the robot must not be moving.)

- You can READ the value using the [User's Device Parameter](#) in RoboPlus Task.

```
FBBalData = PORT[6]
```

```
RLBalData = PORT[5]
```

- You may sample it out like below. It reads 10 values per 0.1 sec and makes an average. This value can be used as the standard value.

```
FBBalCenter = 0
```

```
RLBalCenter = 0
```

```
LOOP FOR ( i = 1 ~ 10 )
```

```
{
```

```
FBBalCenter = PORT[6]
```

```
RLBalCenter = PORT[5]
```

```
FBBalCenter = FBBalCenter + FBBalData
```

```
RLBalCenter = RLBalCenter + RLBalData
```

```
Timer = 0.128sec
```

```
WAIT WHILE ( Timer > 0.000sec )
```

```
}
```

```
FBBalCenter = FBBalCenter / 10
```

```
RLBalCenter = RLBalCenter / 10
```

H/W Specification

- Weight : 2.8 g
- Size : 23mm * 23mm* 10mm
- Working Temperature : -40°C ~ 85°C
- Angular Velocity Calculation Range : -300°/s ~ 300°/s
- Recommended Voltage Supply : 4.5 ~ 5.5 V

Compatible Controllers

- CM-510
- CM-530
- CM-700

RoboPlus Task Supports

- Refer to the [RoboPlus Task](#) directions.

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