

Product Specifications

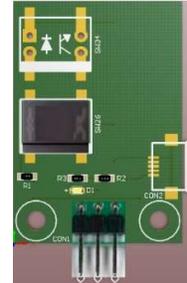
Item No.	RBM Series	Description	Roll Ball Module	Version	1
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● **Function**

Angle signal detection.

● **Applications**

1. Industrial Automation: Used for robotic arm positioning, production line control, etc.
2. Home Appliances: Used for safety protection, energy-saving wake-up functions, etc.
3. Machinery Equipment: Used for condition monitoring, safety alerts, etc.



● **Features**

1. Fast Verification: Converts the functional characteristics of the ball switch component into voltage signals.
2. Easy to Use: Convenient installation, suitable for various application scenarios.
3. Wide Application: Applicable in industrial automation, home appliances, machinery equipment, and other fields.

● **Function Description**

The roll ball sensor switch module is a precision switching device designed to detect angular position or vibration in objects. It typically integrates a roll ball switch mechanism with a circuit module. When the ball switch is actuated, it generates a trigger signal, enabling the output of the corresponding circuit signal.

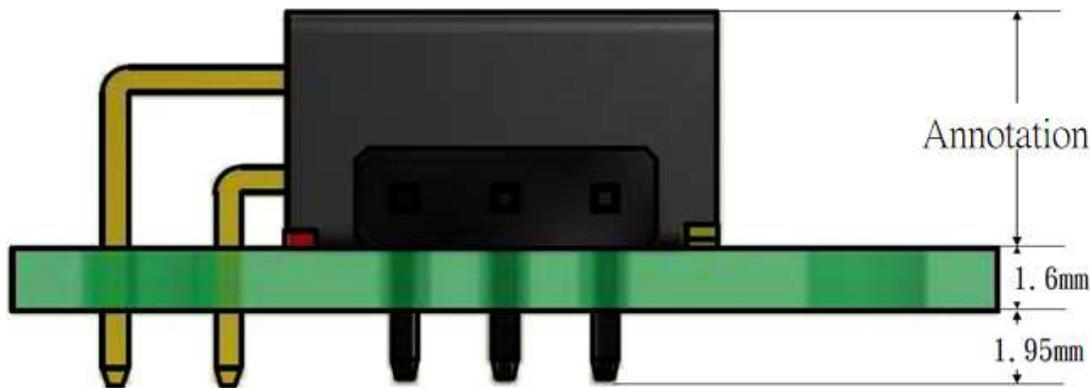
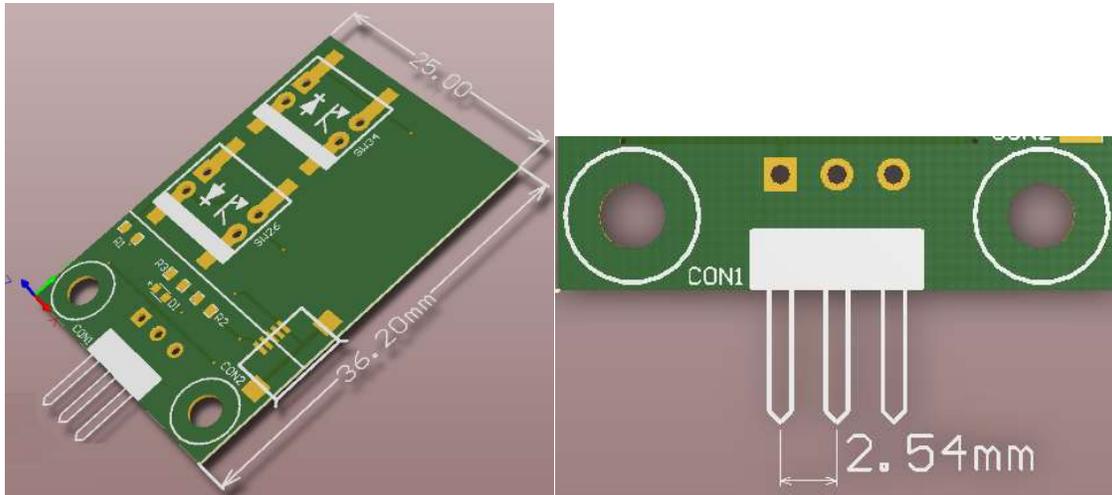


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- Dimensions(Unit: mm, Tolerance: ±0.5mm):
 1. Maximum Dimensions: L36.2x W25.0x 【Annotation + 1.6 + 1.95】 (H).
 2. Pin-Header Pitch: 2.54 mm.



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Annotation									
Model	Height (mm)	Model	Height (mm)	Model	Height (mm)	Model	Height (mm)	Model	Height (mm)
RBM020602	2.5	RBM100612	2.6	RBM310910	10.5	RBM330213	12.5	RBM380102	10
RBM020902	3	RBM130100	8.5	RBM310911	10.5	RBM330310	12	RBM380103	10
RBM021002	2	RBM130200	6.5	RBM310912	10.5	RBM330311	12	RBM390103	10
RBM021102	4	RBM130211	6.5	RBM310913	10.5	RBM330312	12	RBM400100	10
RBM040110	11	RBM151100	7	RBM311104	10	RBM330313	12	RBM400101	10
RBM040210	6	RBM152100	7.4	RBM311110	10	RBM350101	1.8	RBM401100	8.5
RBM070310	8.5	RBM200100	4.5	RBM311111	10	RBM360100	10	RBM401101	8.5
RBM070410	6.5	RBM200110	4.5	RBM311112	10	RBM360101	10		
RBM070500	6.5	RBM200112	4.5	RBM311113	10	RBM360102	10		
RBM070600	6.5			RBM330210	12.5	RBM360104	10		
RBM100610	2.6			RBM330211	12.5	RBM380100	10		
RBM100611	2.6			RBM330212	12.5	RBM380101	10		

- **Recommended Current and Voltage Conditions**(for the circuit board, not specific to multiple Roll ball sensor switch components):

Input Current	Operating Voltage	Conditions
10mA	5V	-

Note: Since the roll ball sensor switch component operates analogically (whether contact-based or photoelectric), the LED brightness may not be strictly ON/OFF. It only indicates whether the ball switch component has been activated. The actual functionality can be verified through equipment such as oscilloscopes or multimeters to confirm the signal.



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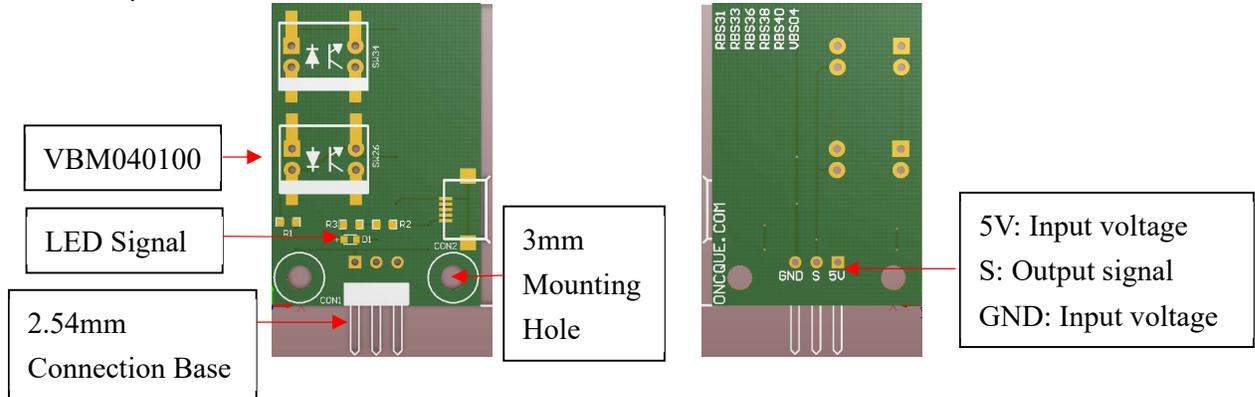
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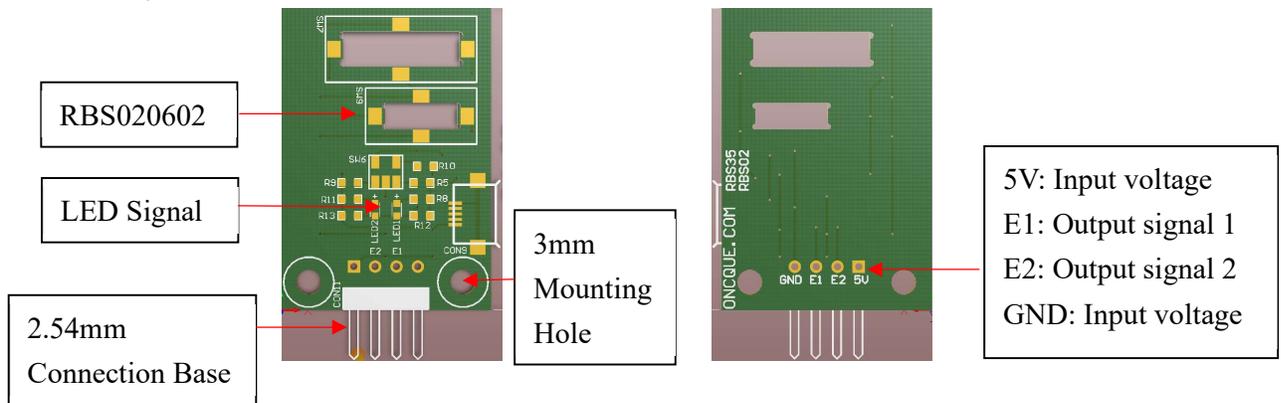
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- **Pin-Define and Appearance:** The module is divided into two types: 3-pin and 4-pin, as described below:

1、3-pin as described below:



2、4-pin as described below:

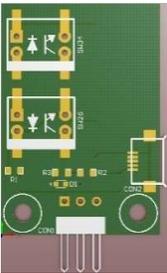
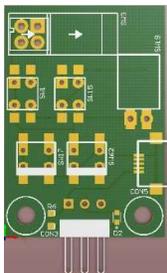
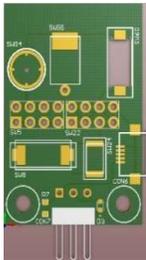
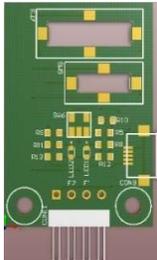


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● **Product comparison table:**

There are a total of four types of circuit boards. The component labels on the circuit boards are applicable to the specified OncQue roll ball switch products. The sensor component shown in the diagram is not installed. The actual components and their positions will depend on the sensor components specified by the customer.

Type	1			2		3	4
Pin	3			3		3	4
Appearance							
Product	RBM310910	RBM330211	RBM360104	RBM040110	RBM100611	RBM020902	RBM020602
	RBM310911	RBM330212	RBM380100	RBM040210	RBM100612	RBM021102	RBM021002
	RBM310912	RBM330213	RBM380101	RBM070310	RBM130100	RBM200100	RBM350101
	RBM310913	RBM330310	RBM380102	RBM070410	RBM130200	RBM200110	
	RBM311104	RBM330311	RBM380103	RBM070500	RBM130211	RBM200112	
	RBM311110	RBM330312	RBM390103	RBM070600	RBM151100		
	RBM311111	RBM330313	RBM400100	RBM100610	RBM152100		
	RBM311112	RBM360100	RBM400101				
	RBM311113	RBM360101	RBM401100				
	RBM330210	RBM360102	RBM401101				



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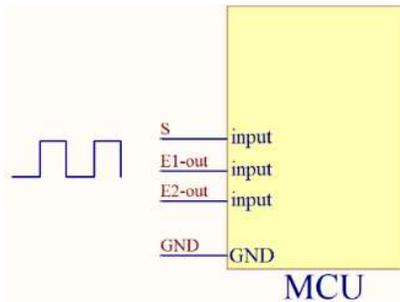
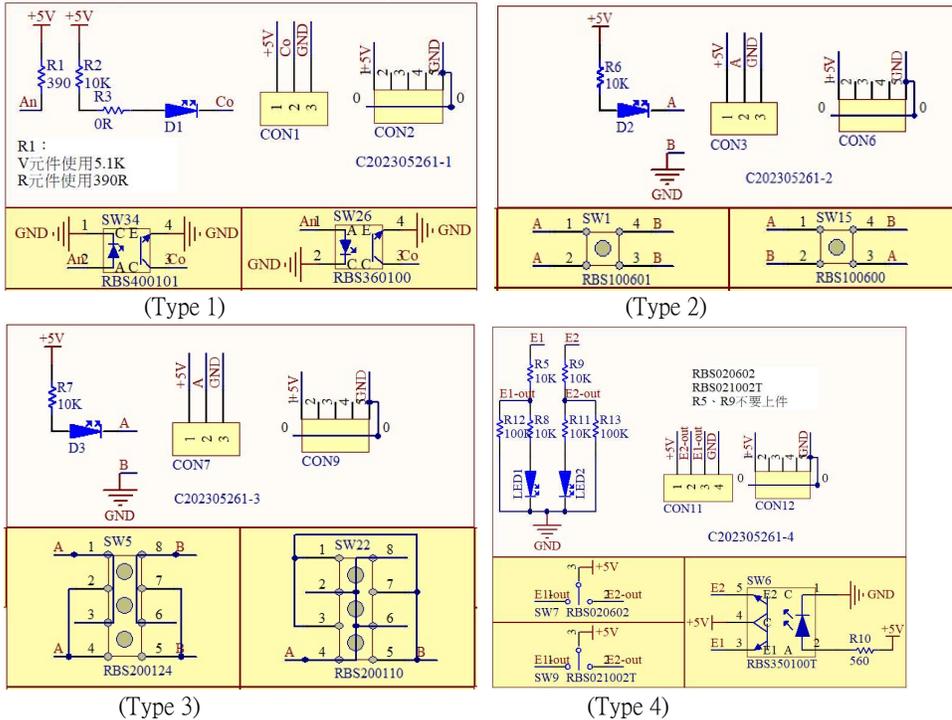
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● **Circuit Design:**

The diagram below illustrates the working principle of the module. The circuit board outputs signals in a square wave form, which are transmitted to the MCU. The duration of the high level (HI) and low level (LO) of the output signal depends on the operating state of the sensing component.



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● **Decoding Description:**

The module's operation modes (tilt/flip/impact) should be referred to in the corresponding component datasheet. For example: If purchasing RBM070410, refer to the RBS070410datasheet. If ordering RBM311110, refer to the RBS311110 datasheet.

Encoding	Description			
RBMABCDEF	RBM: Roll Ball Module.			
	A: 0~2 for ball contact type roll ball switch. 3~4 for optical type roll ball switch.			
	B: Series.			
	CD: Model Number.			
EF: "00" represents standard products, while "01~99" indicates special products.				
OncQue RBM Series				
Ball Contact Type		Optical Type		
RBM020602	RBM100612	RBM310910	RBM330213	RBM380102
RBM020902	RBM130100	RBM310911	RBM330310	RBM380103
RBM021002	RBM130200	RBM310912	RBM330311	RBM390103
RBM021102	RBM130211	RBM310913	RBM330312	RBM400100
RBM040110	RBM151100	RBM311104	RBM330313	RBM400101
RBM040210	RBM152100	RBM311110	RBM350101	RBM401100
RBM070310	RBM200100	RBM311111	RBM360100	RBM401101
RBM070410	RBM200110	RBM311112	RBM360101	
RBM070500	RBM200112	RBM311113	RBM360102	
RBM070600		RBM330210	RBM360104	
RBM100610		RBM330211	RBM380100	
RBM100611		RBM330212	RBM380101	



CERTIFICATE No. 5680
ISO 9001: 2015



CERTIFICATE No. 5680
ISO 14001: 2015



CERTIFICATE No. 5680
ISO 45001: 2018

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● PACKAGE

	Parts No.	Package	Quantity	Total	Dimensions(mm)
1.	RBM Series	Bubble bags	1 pcs	1 pcs	80L*80W*5H
		Inner Box	100 pcs	100 pcs	348L*191W*85H
		Carton	3 Boxes	300 pcs	364L*278W*213H

※ Package shown as below for reference.(Temporary)



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● NOTES

1. Suggestion for usage: For vibration usage or application, we suggest to add hysteresis for IC; if vibration is heavy, optical type of sensor switch is recommended.
2. For the continued product improvement as one of the company policy, specifications may change or update without notice. The latest information can be obtained through our sales offices. Normally, all products are supplied under our standard conditions.
3. If buyer's products will stay in power supply for a long time which needs very high stability, optical sensor switch is strongly recommended.
4. The product conduction time may be affected by external environmental conditions or vibration, resulting in discontinuous conduction.



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● PRECAUTIONS FOR USE

1. If the products are intended to be used for other endurance equipment requiring higher safety and reliability such as life support system, space and aviation devices, disaster and safety system, it's necessary to make verification of conformity or contact us for the details before using.
2. Do not try to clean the switch with a solvent or similar substance after the soldering process.
3. Use water-soluble flux may damage the switch.
4. Please follow the soldering instruction accordingly, otherwise might lead to defective.
5. Do not use switch in the environment of high humidity, because such an environment may cause the leakage current between the terminals.
6. Please do not exceed the rated load as there will be a risk of disabling the product function.
7. In the circuit, switch should not be near or directly connected with the magnetic component solder joints (for example: relays, transformers, etc.).
8. To prevent damaging IR and PT, please make electrostatic protective treatment, for example: wearing a conductive wrist strap or antistatic gloves during production process and grounding machinery etc.



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