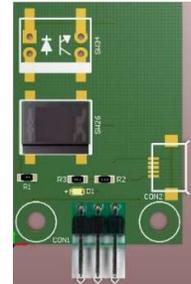


## Product Specifications

Item No.	VBM Series	Description	Vibration Ball Module	Version	1
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### ● Function

1. Vibration signal detection.
2. Centrifugal force detection.



### ● Application

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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ISO 9001:2015



CERTIFICATE No. 5680  
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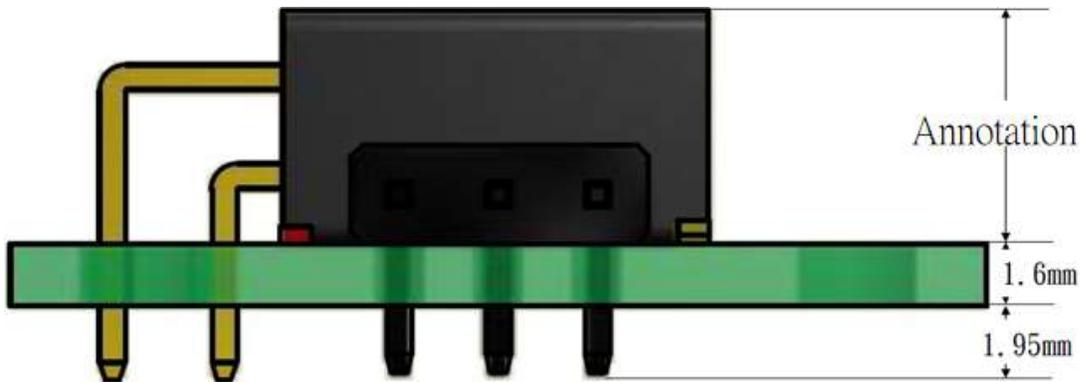
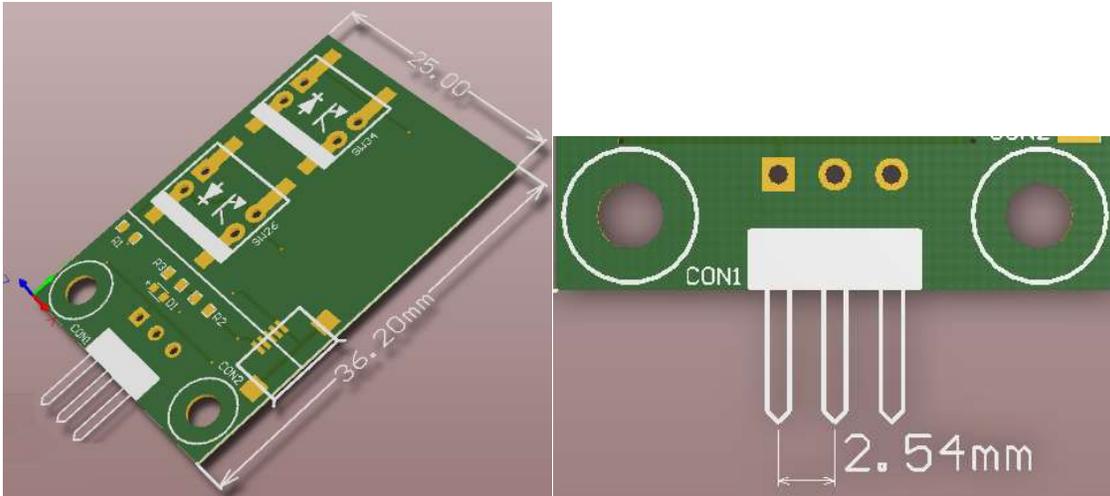
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## Product Specifications

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● **Dimensions**(Unit: mm, Tolerance: ±0.5mm):

1. Maximum Dimensions: L36.2× W25.0× 【Annotation + 1.6 + 1.95】 (H).
2. Pin-Header Pitch: 2.54 mm.



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## Product Specifications

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Annotation			
Model	Height (mm)	Model	Height (mm)
VBM020601	7.8	VBM040100	10
VBM020691	7.8	VBM040200	10.5
VBM020701	5.4		
VBM030600	2.5		
VBM061100	7		
VBM062100	7.4		
VBM100100	3.2		

- **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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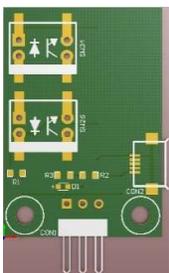
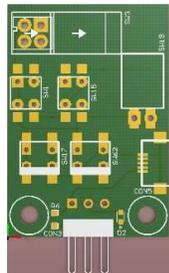
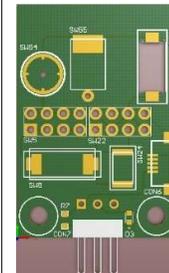


## Product Specifications

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● **Product comparison table:**

There are a total of three 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
Pin	3	3	3
Appearance			
Product	VBM040100	VBM061100	VBM020601
	VBM040200	VBM062100	VBM020691
			VBM020701
			VBM030600
			VBM100100



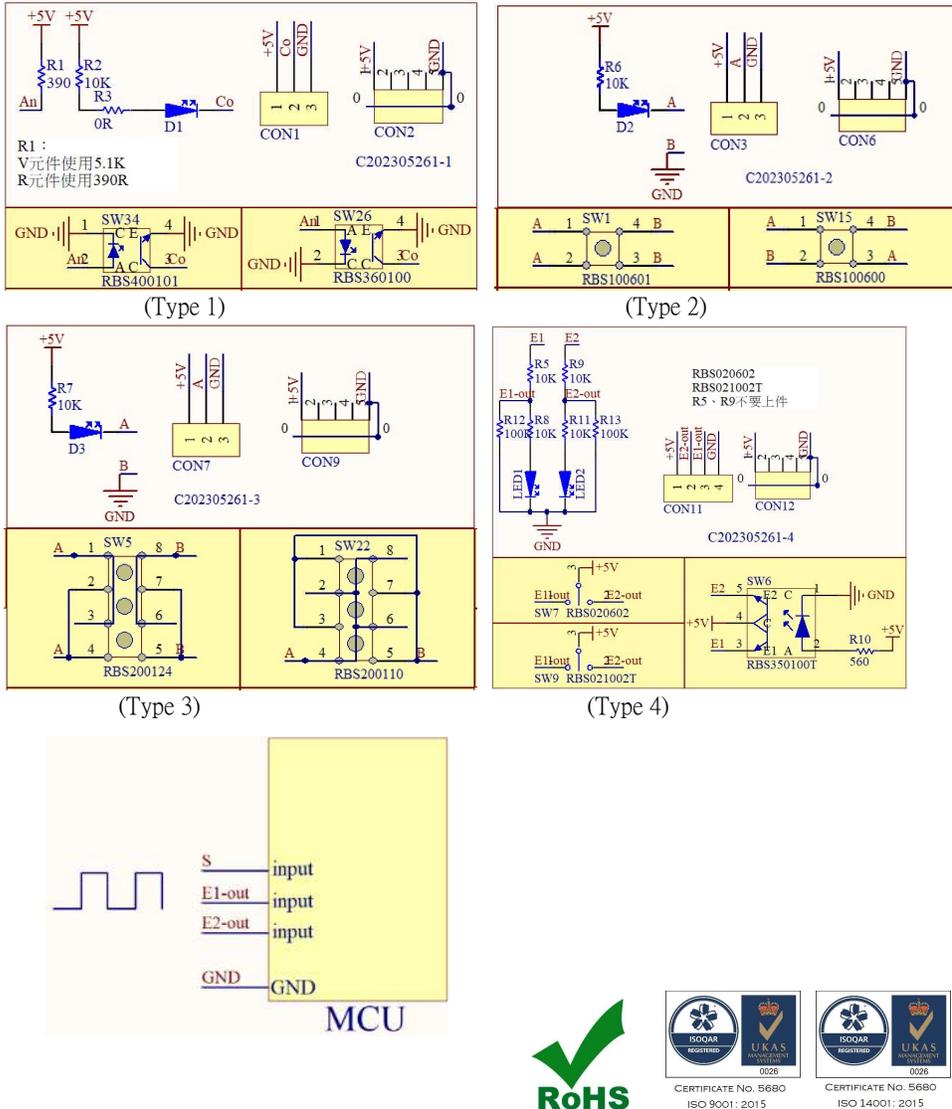
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## Product Specifications

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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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## Product Specifications

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● **Dcoding Description:**

The module's operation modes (tilt/flip/impact) should be referred to in the corresponding component datasheet. For example:If purchasing VBM020601, refer to the VBM020601 datasheet.If ordering VBS040100, refer to the VBS040100 datasheet.

Encoding	Description
VBM <u>ABCDEF</u>	<p><b>VBM:</b> Vibration Ball Module.</p> <p><b>A:</b> 0~1 Vibration.</p> <p><b>B:</b> Series.</p> <p><b>CD:</b> Model Number.</p> <p><b>EF:</b> "00" represents standard products, while "01~99" indicates special products.</p>

OncQue VBM Series	
Ball Contact Type	Optical Type
VBM020601	VBM040100
VBM020691	VBM040200
VBM020701	
VBM030600	
VBM061100	
VBM062100	
VBM100100	



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### Product Specifications

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● PACKAGE

	Parts No.	Package	Quantity	Total	Dimensions(mm)
1.	VBM 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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## Product Specifications

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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.



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## Product Specifications

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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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