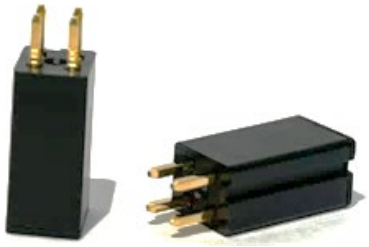
Tilt Sensor Switch

Item No.	RBS040110	Description	Ball-Contact	Version	13
Page	1 of 7		Publish Date	Nov. 24, 2022	

● FUNCTIONS



1. Horizontal Tilt Detecting
2. Vertical Up-Side Down Detecting

● APPLICATIONS

1. Position Detection for Iron
2. Lighting system for night time while car hold being opened
3. Toys, Entertainment Device

● FEATURES

1. Suitable for vertical PCB.
2. Switch state: DIP Normal Close.
3. Housing made of high insulation plastic material, free from electric conduction and rust problem.
4. Gold-plated ball and terminals, low possibility of oxidization.
5. All plastic materials subject to industrial purpose, resist high temperature and meet fireproof function.
6. Simple ON and OFF signals, easy for design.
7. RoHS compliance, an ideal substitute for mercury switch.
8. A more economical tilt and rotation detection option than IC design solution.
9. All made in Taiwan and examined before shipment.

No.1, Jingke 3rd Rd., Nantun Dist., Taichung City 40852, Taiwan
http://www.oncque.com

Tel: +886-4-2358-8178
Fax:+886-4-2358-3555
E-mail: oncque@oncque.com.tw

Tilt Sensor Switch

Item No.	RBS040110	Description	Ball-Contact	Version	13
Page	2 of 7		Publish Date	Nov. 24, 2022	

● PATENTS

1. Taiwan Patent No. M 155965
2. Taiwan Patent No. M 308482
3. Taiwan Patent No. I 476797
4. U.S.A. Patent No. US 6,198,059 B1
5. U.S.A. Patent No. US 7,256,360 B1
6. U.S.A. Patent No. US 7,446,272 B2
7. U.S.A. Patent No. US 9,058,945 B2
8. China Patent No. 201220308500.8
9. China Patent No. 201210218323.9

No.1, Jingke 3rd Rd., Nantun Dist., Taichung City 40852, Taiwan
http://www.oncque.com

Tel: +886-4-2358-8178
Fax:+886-4-2358-3555
E-mail: oncque@oncque.com.tw

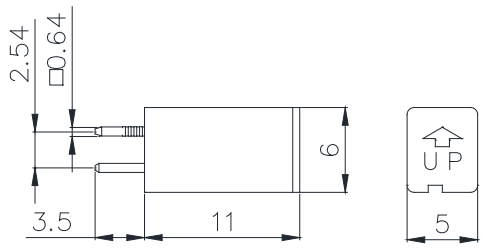
Tilt Sensor Switch

Item No.	RBS040110	Description	Ball-Contact	Version	13
Page	3 of 7		Publish Date	Nov. 24, 2022	

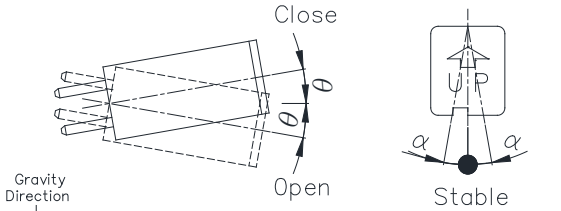
● DIMENSIONS / OPERATION / P.C.B. LAYOUT (Unit: mm, Tolerance: ±0.25mm)

Fig. 1

RBS 04 01 10



Operation Diagram

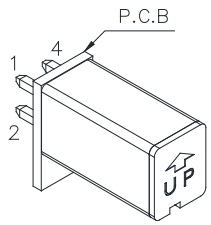


Tilt Angle Range
θ>10°; θ<−10°

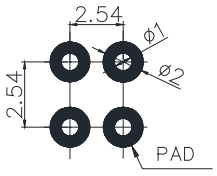
Unstable angle
α>10°

P.C.B. Layout (DIP) / Top View

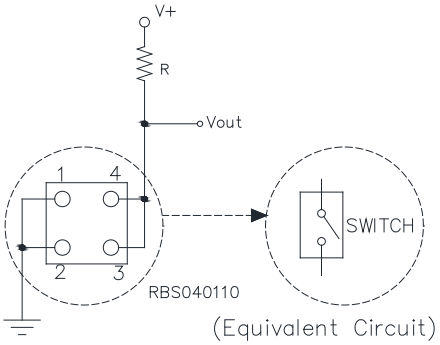
(PCB Installed Direction)



(footprint)



Application Circuit



(Equivalent Circuit)

No.1, Jingke 3rd Rd., Nantun Dist., Taichung City 40852, Taiwan
http://www.oncque.com

Tel: +886-4-2358-8178
Fax:+886-4-2358-3555
E-mail: oncque@oncque.com.tw

Tilt Sensor Switch

Item No.	RBS040110	Description	Ball-Contact	Version	13
Page	4 of 7		Publish Date	Nov. 24, 2022	

Current/Voltage Suggested

Input Current	Operating Voltage	Condition
1.0 mA	5 V	--

● ELECTRICAL CHARACTERISTICS

1.	Contact Resistance	10 Ω max.
2.	Maximum Contact Current	10 mA
3.	Operation Diagram	Refer to Fig. 1
4.	Insulation Resistance	1000 MΩ min., 100 VDC
5.	Dielectric Strength	500 VDC min., 1 minute
6.	Capacitance	5pF max.

No.1, Jingke 3rd Rd., Nantun Dist., Taichung City 40852, Taiwan
http://www.oncque.com

Tel: +886-4-2358-8178
Fax:+886-4-2358-3555
E-mail: oncque@oncque.com.tw

Tilt Sensor Switch

Item No.	RBS040110	Description	Ball-Contact	Version	13
Page	5 of 7		Publish Date	Nov. 24, 2022	

● RELIABLE TEST ITEMS

Reliable Test for RBS040110

	Test Item	Contents
1	Operating Temperature	-25℃ ~ 85℃
2	Storage Temperature	-40℃ ~ 85℃
3	Humidity	40 ℃ / 95 %RH
4	Mechanical Life	2 Hz horizontal 1,000,000 times
5	Electrical Life	100,000 times

● SOLDERING CONDITION

Following soldering conditions are for reference only, please use soldering information that solder paste manufacturer recommends.

Condition / Suitable Production Process	Soldering Temperature	Soldering Time	Wattage of Manual Soldering	Type
Wave Soldering	260±5℃	< 5 seconds max.	-	DIP
Manual Soldering	300±5℃	< 3 seconds max.	30W or Temperature-controlled manual soldering	DIP

No.1, Jingke 3rd Rd., Nantun Dist., Taichung City 40852, Taiwan
http://www.oncque.com

Tel: +886-4-2358-8178
Fax:+886-4-2358-3555
E-mail: oncque@oncque.com.tw

Tilt Sensor Switch

Item No.	RBS040110	Description	Ball-Contact	Version	13
Page	6 of 7		Publish Date	Nov. 24, 2022	

● PACKAGE

	Part Number	Package	Quantity	Total	Dimension (mm)
1.	RBS040110	PE Bag	500 pcs	500 pcs	205L*145W
		Inner Box	10 PE Bags	5,000 pcs	348L*191W*85H
		Carton	3 Boxes	15,000 pcs	364L*278W*213H

※ Package shown as below for reference.



PE Bag　　Inner Box　　Carton

No.1, Jingke 3rd Rd., Nantun Dist., Taichung City 40852, Taiwan
http://www.oncque.com

Tel: +886-4-2358-8178
Fax:+886-4-2358-3555
E-mail: oncque@oncque.com.tw

Tilt Sensor Switch

Item No.	RBS040110	Description	Ball-Contact	Version	13
Page	7 of 7		Publish Date	Nov. 24, 2022	

● NOTE

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.

● PRECAUTIONS FOR USE

1. If the products is 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. Please follow the soldering instruction accordingly, otherwise might lead to defective.
4. Use water-soluble flux may damage the switch.
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.).

No.1, Jingke 3rd Rd., Nantun Dist., Taichung City 40852, Taiwan
http://www.oncque.com

Tel: +886-4-2358-8178
Fax:+886-4-2358-3555
E-mail: oncque@oncque.com.tw