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產品規格說明書  
SPECIFICATION FOR APPROVAL

客戶 *Buyer Name:*

專案 *Application:*

品名 *Part Name:*      Micro Motor

型號 *Part No:*         IND-YZ0610J-2830

客戶確認 *Buyer Approval*

料號 <i>Buyer Part No.</i>	
簽章 <i>Signatures &amp; Company Stamp</i>	

擬制 <i>Designed by</i>	魏友平 Wei Youping
審核 <i>Checked by</i>	王飛 Wang Fei
批准 <i>Approved by</i>	陳峰 Chen Feng

# 規格說明Specification

編號Spec No.:	LL-3-J-18020
版本Version:	A.1
日期Date:	2018-10-09

## Index, Content, and History of Revision

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## History of Revision


# 規格說明Specification

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## 1. General Scope

The specification applies to micro DC motor, part no.: IND-YZ0610J-2830

## 2. Operating Conditions

No.	專案/Item	規格/Specification
2-1	額定電壓Rated Voltage	1.3 V DC
2-2	使用電壓範圍Operating Voltage	0.9-1.6 V DC
2-3	旋轉方向Direction of Rotation	CW
2-4	馬達位置Position of Motor	All positions
2-6	工作溫度Working Temperature	-30 ~ 70°C, 65±20%RH. No moisture condensation.
2-7	保存溫度Storage Temperature	-40 ~ 80°C, 65±20%RH. No moisture condensation.

## 3. Measuring Conditions

The measurement at 20°C & 65%RH is standard. If the judgment is not questionable, recognize measurement at 5°C to 35°C & relative humidity 45% to 85%. Direction of motor is shaft horizontal.

## 4. Mechanical Specifications

No.	專案/Item	規格/Specification
4-1	外觀Appearance	By visual examination, no obvious evidence of machanical damage and rust.
4-2	軸向間隙Axial End Play	0.1-0.3mm
4-3	尺寸Dimensions	Refer to 10. Mechanical Drawing


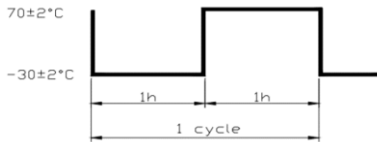
## 5. Electrical Performance

No.	專案/Item	規格/Specification	條件及備註/ Condictions & Remarks
5-1	額定轉速 Rated Speed	8,500±2000 rpm	Tested at Item 2-1 rated voltage.
5-2	額定電流 Rated current	90 mA Max	Tested at Item 2-1 rated voltage.
5-3	啟動電壓Starting Voltage	0.75 V DC Max	At rated load(Counterweight) any position of rotor
5-4	堵轉電流Stall current	145 mA Max	Tested at Item 2-1 rated voltage.
5-5	端子阻抗Terminal Resistance	11 Ω (±20%)	At 20°C.
5-6	絕緣電阻Insulation Resistance	1 MΩ Min	Tested at DC 100V between the wires and housing.
5-7	負載數據Test data with load	Refer to 10. Mechanical Drawing	
5-8	機械噪音Mechanical noise	50dB (A) max.	See below sketch of noise test:
	在額定電壓、額定負載（振子）下 背景噪音：不大于 28dB.A 計權 測試儀器：B&k 夾具重量：700g At rated voltage and rated load (Counterweight). Back ground noise 28dB(A) Max Measuring instruments: B&k Weight of jig:700g		<p>The diagram illustrates the noise test setup. A motor, labeled 'Moto 振動电机', is mounted on a 'Test jig 試驗夾具'. A microphone, labeled 'Microphone 拾音器', is positioned at a distance of 10cm from the motor. The test is conducted at rated voltage and rated load (Counterweight).</p>

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### 6. Reliability

No.	專案/Item	測試條件/Specification	判定標準/Judgment
6-1	壽命 Lifetime Test	Voltage: 1.3 V DC Test Mode: 0.5s On, 0.5s Off, as 1 cycle. Total cycles: 200 000. 	After tests, the motors shall meet: 1) Rated speed: Initial data -30% Min, Initial data +60% Max 2) Rated current: Initial data $\pm 30\%$ max 3) Starting voltage: 1.1 V DC max.
6-2	低溫貯存放置 Low Temperature Storage Test	Temperature: $-40 \pm 2^\circ\text{C}$ Time: 96hrs	After the tests, after two hours placed at room temperature, the motors shall meet: 1) Rated speed: varies within $\pm 30\%$ of initial data. 2) Rated current: varies within $\pm 30\%$ of initial data. 3) Starting voltage: 1.1 V DC max.
6-3	高溫貯存放置 High Temperature Storage Test	Temperature: $60 \pm 2^\circ\text{C}$ Time: 96hrs	
6-4	濕度放置 Exposure to High Humidity	Temperature: $40 \pm 2^\circ\text{C}$ Humidity: 90~95RH Time of Exposure: 96hrs	
6-6	熱衝擊 Heat Shock Test	 Test Mode: As shown above. Test Cycles: 20	After the tests, after two hours placed at room temperature, the motors shall meet: 1) Rated speed: varies within $\pm 30\%$ of initial data. 2) Rated current: varies within $\pm 30\%$ of initial data. 3) Starting voltage: 1.1 V DC max.
6-7	自然跌落 Free Drop Test	The motor is fixed with a jig of 75 grams. Free drops onto the concrete floor from a height of 1.5 meters, in direction of $\pm x$ , $\pm y$ , $\pm z$ . Two times each direction.	After the tests, the motors shall meet: 1) Rated speed: varies within $\pm 30\%$ of initial data. 2) Rated current: varies within $\pm 30\%$ of initial data. 3) Starting voltage: 1.1 V DC max.

### 7. Environmental

The product shall be RoHS compliant.

### 8. Caution in Use

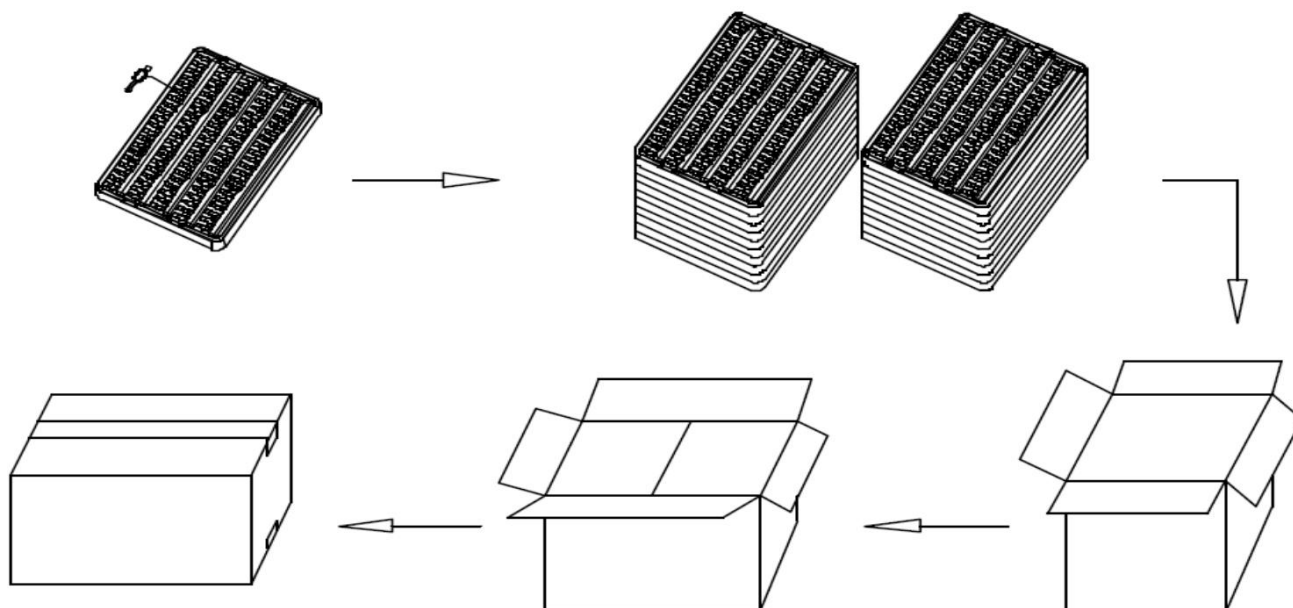
8-1	Place the motors carefully in transportation to avoid any damage to the motor body; otherwise, its functions would be damaged due to collision.
8-2	Do not leave and use the motors in the environment of high temperature, high humidity and corrosion gas; otherwise, it would cause damage to the functions.
8-3	Do not lock the shaft and bearing; otherwise, the coils would be very hot and burn up and the motor will stop working.
8-4	It is not permitted to place the motor with magnetic objects; otherwise, it may cause the functions fall down.
8-5	Use the motors within six months after you buy it. Do not place it at moisture place. Ventilation is required in your store.

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### 9. Packaging

- 9-1 100 pcs/tray, size of tray: 230mm\*158mm\*15mm.
- 9-2 20 trays/stack, Qty/ stack: 2000pcs.
- 9-3 2 stacks/inner box, Qty/inner box: 4000pcs.
- 9-4 2 inner boxes/carton, size of carton: 360mm\*260mm\*170mm..
- 9-5 Seal the carton, indicate the quantity and lot number on it.

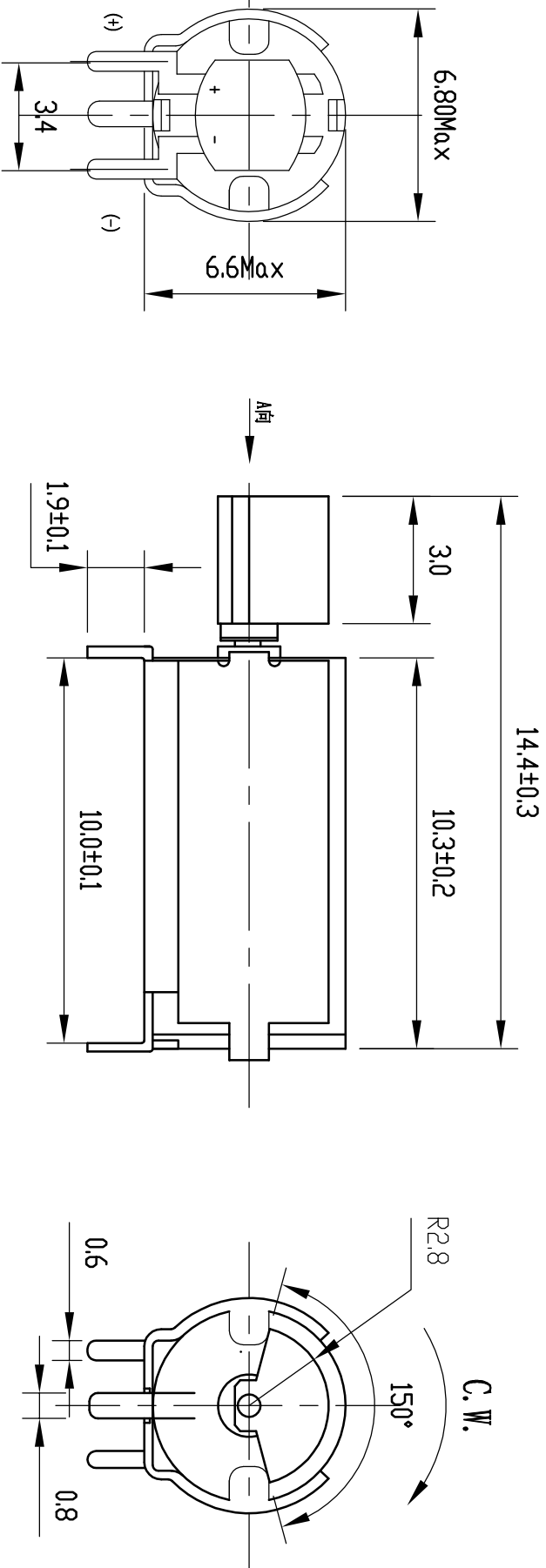


### 9-6 Packaging Drop Tests

Standard height of drop: 75cm for gross weight within 9kgs; 60cm for gross weight between 9kgs and 23kgs.

Drop one time from each plate, totally 6 times. Drop one time from each corner, totally 3 times.

No damage to the motors after the packaging drop tests.



Technical Requirements:

1. Rated Voltage: 1.3V
2. Rated Current: 90mA Max
3. Rated Speed: 8500±2000rpm
4. Stall Current: 145mA Max
5. Terminal Resistance: 11Ω (±20%)
6. Starting Voltage: 0.75V Max
7. Shaft End Play: 0.1~0.3mm
8. Unmarked Tolerance±0.1mm

借 (通) 用件登记	1. Rated Voltage: 1.3V 2. Rated Current: 90mA Max 3. Rated Speed: 8500±2000rpm 4. Stall Current: 145mA Max 5. Terminal Resistance: 11Ω (±20%) 6. Starting Voltage: 0.75V Max 7. Shaft End Play: 0.1~0.3mm 8. Unmarked Tolerance±0.1mm					
底图总号						
签字						
日期						

				INEED ELECTRONICS (HK) LIMITED			
编制	董小云			Outline Drawing			
核对	向桂兰						
批准	王万强			IND-YZ0610J-2830			