



維盟科技有限公司
Evowave Technology Co., Ltd.

規格書 / Specification

| | |
|--------------|------------------------|
| Description: | Linear Vibration Motor |
| Part No.: | LD103015WXX |
| Date: | 2017/11/11 |

地址:新北市汐止區康寧街 169 巷 27 號 10 樓之 1

Address: 10F-1, No.27, Lane 169, Kang-ning St., Hsi Chih
221, Taipei, Taiwan.

Tel: 886-2-2692-6058

Fax: 886-2-2692-6659

重要提示 Important Notes:

1. 如对电机的性能和（或）寿命有任何争议，仅基于此规格书作出判断。

If there is any argument on motor performance and/or life, judgment is to be made base on this specification only.

2. 客户方有责任确认该电机能满足您的使用要求。

Customer has the responsibility to ensure that motor can satisfy the requirement of your application.

3. 如果公司未提供技术规格，该文件将详细叙述与贵公司商定的技术规格。

In the event that an official specification is not present by customer, this document will specify the agreed technical specification.

4. 在满足规格的条件下，我司可以改变零件材料、尺寸及形状来改善品质（或）性能（或）生产效率。

Within the limitation to satisfy this specification, DMEGC has the convenience to change the materials, size and shapes of components of the motor for the purpose of improving quality, and/or performance, and/or production efficiency.

5. 收到此规格书后，贵司应于下订单之前将规格书副本签回以示贵司已确认。如贵司未能在规定时间内签回副本，我司将认为贵司已收到并承认该规格书。

After the receipt of this specification, customer should send a signed copy to DMEGC, before you issued purchase order for the confirmation on acknowledgement. DMEGC, regard it as the receipt of this specification acknowledged if customer fails to return the confirmation to us within the described period.

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1、应用范围 Application

— 本说明书适用于LD103015WXX 电机。

This specification applies to linear vibration LD103015WXX model manufactured.

— 此规格书提供了直线振动马达的结构、功能和使用条件。

These specifications provide structure, function and usage condition for linear vibration motor.

2、储存和使用环境 Storage, Operating Temperature/Humidity Circumstance

| 序号 NO. | 项目 Items | 条件 Condition |
|-----------|-------------------------------------|---|
| 2-1 | 储存环境 Storage temperature range | -40℃ ~ 85℃ , ordinary humidity (No condensation of moisture) |
| 2-2 | 使用环境 Operating temperature range | -20℃ ~ 70℃, ordinary humidity (No condensation of moisture) |

3、标准测试条件 Standard Test Conditions

| 序号 NO. | 项目 Items | 条件 Condition |
|-----------|---------------------------------|--|
| 3-1 | 温度 Standard test temperature | 20±5℃ |
| 3-2 | 湿度 Standard test humidity | 65%±20%RH |
| 3-3 | 额定输入电压 Rated Input Voltage | 2.0 V rms 交流正弦 2.0 V rms AC, Sinewave |
| 3-4 | 输入频率 Input Frequency | 196 Hz |
| 3-5 | 测试条件 Test Condition | 见图 1 Refer to Figure 1 |

4、测试方法 Test Method

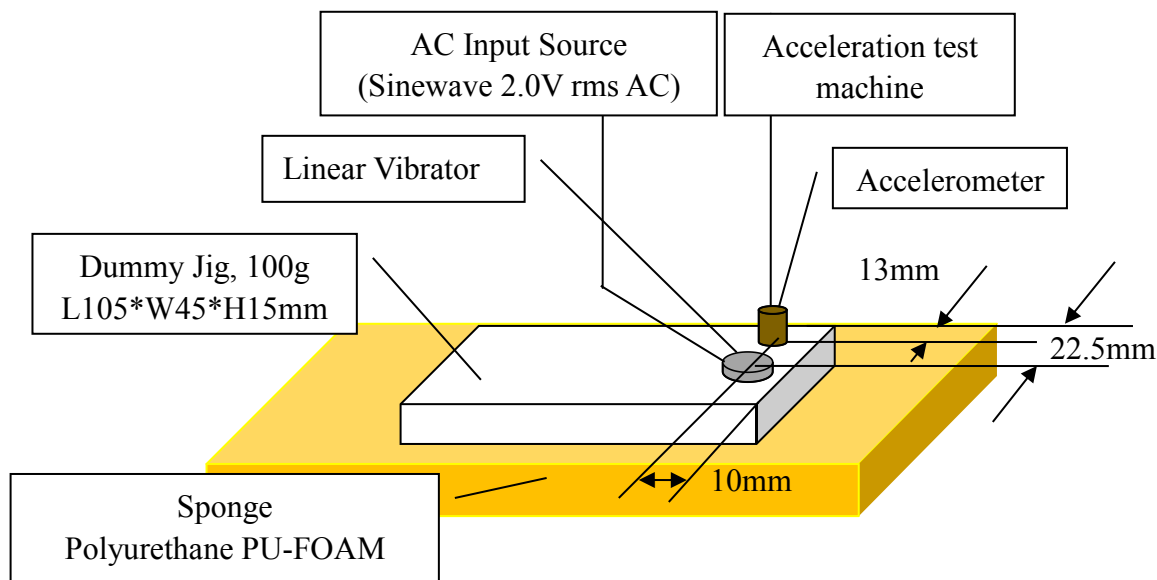


Figure 1. Test method

- 将测试马达和加速度传感器按照上图指定尺寸位置固定好

Attach accelerometer and vibrator on the position on dummy jig according to the figure 1.

- 接通后 2-3 秒后读数.

Acceleration of linear vibrator should be measured 2~3 second later when source inputed

- 测试过程中，传感器与测试治具要固定牢固.

At measurement of acceleration, test jig and accelerometer should be stabilized.

- 为了测量数据准确，振动量数据取平均值.

For the precise measurement, acceleration of linear vibrator is average data.

- 在不影响判定结果的情况下，测试环境温度和湿度可以放宽至 5-35℃，45%-85%RH.

If the judgment is not questionable, recognize measurement at 5℃ to 35℃ & relative humidity 45%RH to 85%RH.

5、规格 Specifications

| NO. | 项目/Items | 规格/Specification |
|------|---------------------------------|---|
| 5-1 | 额定电压/ Rated Voltage | 2.0 Vrms Sinewave |
| 5-2 | 工作电压/ Operating Voltage Range | 0.1~2.05 Vrms |
| 5-3 | 电阻/ Resistance | 25 Ohm \pm 10% |
| 5-4 | 额定电流/ Rated Current | Max. 90 mArms |
| 5-5 | 额定频率/ Rated Frequency | 196 Hz |
| 5-6 | F0 点振动量/ Acceleration@F0 | Min. 1.2 Grms |
| 5-7 | 频率特性/ Frequency Characteristics | 196 \pm 5 Hz Refer to Figure 2 |
| 5-8 | 上升时间/ Rising time | 40ms Max from 0 to 50% normal acceleration |
| 5-9 | 下降时间/ Falling time | 50ms Max from 100% to 50% normal acceleration |
| 5-10 | 噪音/ Noise | Max. 50 dB(A) (10cm distance from decibel meter Input Source : 196Hz, 2.0Vrms AC, Sinewave) |
| 5-11 | 绝缘电阻/Insulation Resistance | Min. 10M ohm (100V DC input, between Case and Lead wire) |

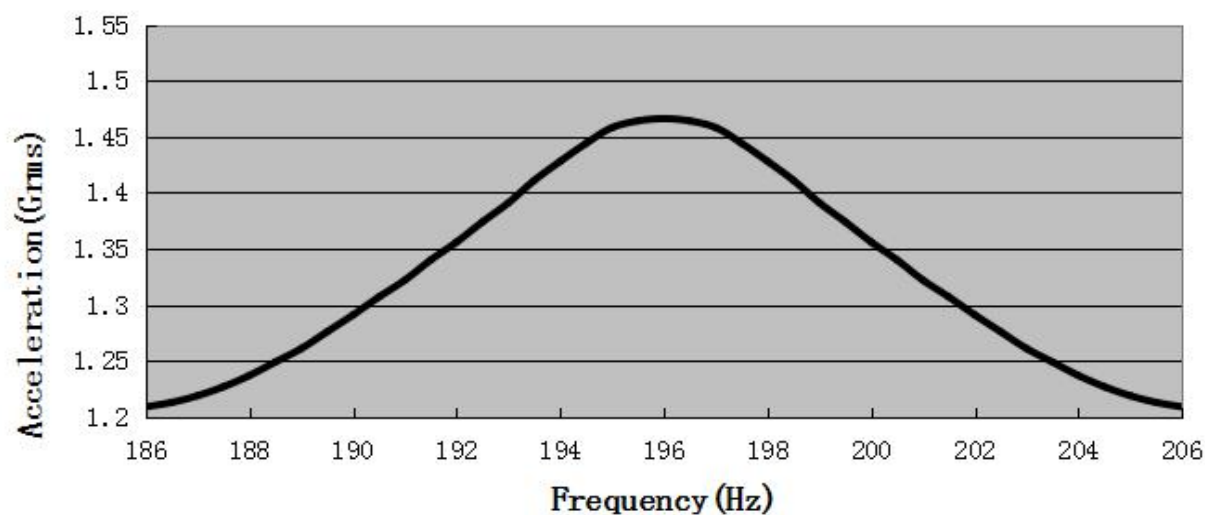


Figure 2. Frequency Response

6、可靠性试验 Reliability Test

| NO. 序号 | Item 项目 | Test condition 试验条件 |
|-----------|--|--|
| 6-1 | 高温储存试验 High temperature storage test | 温度/Temperature: $(80\pm 2)^{\circ}\text{C}$ 时间/Time: 96H 湿度/Humidity: 常湿/Ordinary Humidity |
| 6-2 | 低温储存试验 High temperature storage test | 温度/Temperature: $(-40\pm 2)^{\circ}\text{C}$ 时间/Time: 96H 湿度/Humidity: 常湿/Ordinary Humidity |
| 6-3 | 恒温恒湿 Humidity test | 温度/ Temperature: $(55\pm 2)^{\circ}\text{C}$ 时间/Time: 96H 湿度/Humidity: 95%RH |
| 6-4 | 温度冲击试验 Thermal shock test | 温度/Temperature: $-40^{\circ}\text{C}\sim 70^{\circ}\text{C}$ 1 个周期/1 cycle: -40°C 30min, 70°C 30min 循环周期数/Circle cycle: 24cycles |
| 6-5 | 寿命试验 Life test | 测试电压/Voltage: 2.0Vrms AC, Sinewave 频率/Frequency: 196Hz 1 个周期/1 cycle: 2sec ON/1sec OFF 寿命周期/life cycle: 500000 cycles |
| 6-6 | 跌落试验 Drop test | 工装重量/JIG Weight: 150g 高度/ High: 1.5m 跌落次数/Time: 6 个面各 3 次/ 6 surfaces, 3 times in each surface 试验状态/Test state: 将电机放在重约 150 克的工装里, 自由地跌落至混凝土地面上 The motor is set into the box approximately weight 150g and fall free on the concrete floor |

7、可靠性试验判定 Requirement Reliability Test Judgment

7-1 以下条件必须在测试结束后满足/After test, following specifications must be satisfied.

F0 点振动量/Acceleration: 初始值/Initial Value $\pm 30\%$

F0: 初始值/Initial Value $\pm 10\text{Hz}$

额定电流/Rated current: Initial Value $\pm 30\%$

噪音/Noise: 50 dB(A) Max

7-2 试验完毕后需在标准测试条件下放置 2 小时后再测试。

The measurement is conducted after 2hours of recovery under standard test condition after reliability test.

7-3 外表和结构无异常。

There should be no abnormalities in appearance and structure.

8、注意事项 Caution for Use

8-1 不要在如下条件下使用马达，它将降低产品的性能甚至马达损坏。

Don't use under the following conditions. It may cause decline of performance or damage.

8-1.1 不要将产品放入例如水，酒精等液体中。

Do not drop into fluid (such as water, alcohol, etc)

8-1.2 不要将产品长期置于高温高湿条件下。

Do not keep at high temperature or high humidity for extended periods of times.

8-1.3 不要将产品靠近腐蚀性气体。

Do not use near gasses which cause erosion.

8-2 马达的额定电压为 2.0V，工作电压为 0.1~2.05V，实际使用中马达最大驱动电压不能超过 2.05V。

Motor rated voltage is 2.0V, working voltage is 0.1~2.05V, so motor drive voltage can not exceed 2.05V.

8-3 马达的额定驱动信号为交流正弦波，推荐使用标准信号进行马达驱动。

Motor driving signal should be AC sine wave.

8-4 在存储、运输和使用的过程中不要将产品靠近磁性设备。如：不能使用磁性吸笔安装马达。

Don't make the product near magnetic devices in the process of storage, transportation and use. Such as do not use magnetic pen to assemble the motor.

8-5 这款马达有强磁性，使用的时候需要注意。

The vibrator has a strong magnet, please pay attention to it.

8-6 马达固定时，振动方向上必需固定好(安装力推荐 5~8N)，否则将容易引起噪音。

Vibrator should be fixed firmly in vibrate direction (setting force 5~8N), or it will be easy to cause noise.

8-7 马达安装时，推荐使用双面胶固定，同时用软态材料(泡棉)提供压力。

Use double side adhesive to fix the motor, Soft material (such as poron, poam etc.) can be used to provide setting pressure.

8-8 包装：请参考包装图纸(也可以依据客户需求作调整)。

Packing: Please refer to the packaging drawing. (It can be modified by the request of the users.)

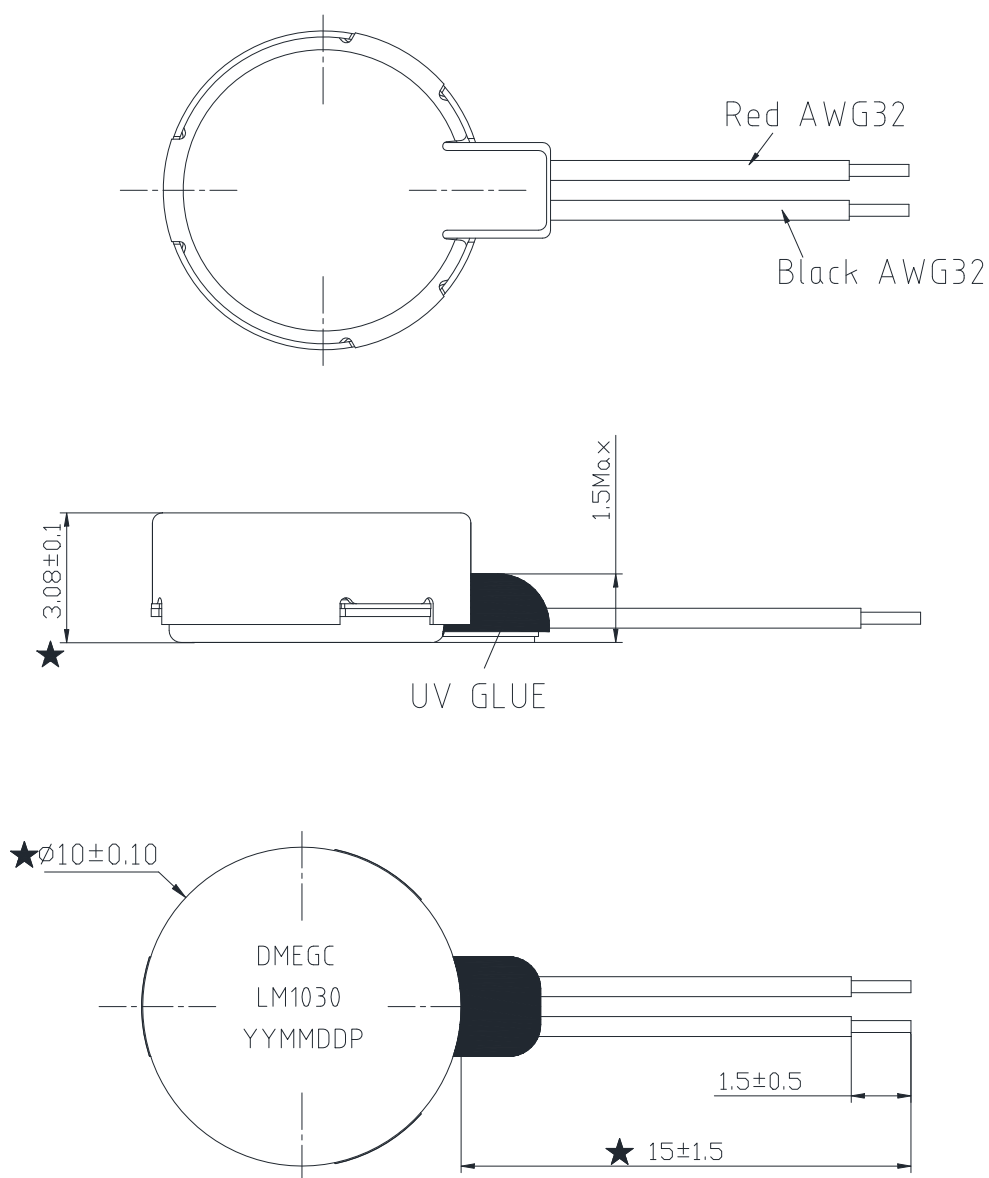
8-9 发生任何问题，客户与东磁之间可通过协商解决问题，并通过书面的形式来反映问题

If any problems occur, both the user and DMEGC shall try to solve the problem by mutual agreement and on reflection of the specification sheet.

8-10 禁用物质允许含量 Prohibited substances allowed in

| 禁用物质名称 Substance name | 镉及镉化物 (Cd) ppm | 铅及铅化物 (Pb) ppm | 汞及汞化物 (Hg) ppm | 六价铬化合物 (Cr) ppm |
|--------------------------|--|--------------------|----------------------|-------------------------------------|
| 标 准 Threshold Level | ≤100 | ≤1000 | ≤1000 | ≤1000 |
| 禁用物质名称 Substance name | 包装材料合计 (In packing material) (Cd+Pb+Hg+Cr) ppm | 多溴联苯 (PBB) ppm | 多溴二苯醚 (PBDE) ppm | 溴 Br 氯 Cl |
| 标 准 Threshold Level | ≤1000 | ≤1000 | ≤1000 | Br≤700ppm Cl≤900ppm 合计含量≤1500ppm |

9、产品外形图 Product Outline Drawing



打码规则:

DMEGC: 生产商代号 LM1030: 马达型号

YYMMDD: 年月日 P: 生产线代号

10、包装规范 Packing Specification

1. 一箱内包装 3000PCS 标准。

Pack 3000 pcs standards in a box

2. 箱体规格为 350mm×255mm×175mm(3000 只装外包装)。340mm×250mm×160mm (3000 只装内包装)。

The body specification of the box is 350mm × 255mm × 175mm (3000pcs), 340mm × 250mm × 160mm (3000pcs)

3. 单盒为 150PCS 标准，一匣为 20 盒 3000PCS 标准，一箱为 1 匣 3000PCS 标准。

The single tray is 150 pcs standards; one bundle is 3000 pcs standards of 20 trays, a box is 3000 pcs standard of one bundle

4. 箱外侧标识品名、型号、厂名。

Marked name of an article, type, quantity, weight and factory name on the outside of the case.

GIVE A DEMONSTRATION 包装示例

