



維盟科技股份有限公司
Evowave Technology Co., Ltd.

規格書 / Specification

Description:	Linear Vibration Motor
Part No.:	VD0412FXX
Date:	2026/05/26

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.

内 容
Table of contents

- | | |
|--------------------|---|
| 01、 应用范围 | Application |
| 02、 储存和使用环境 | Storage, Operating Temperature/Humidity Circumstance |
| 03、 标准测试条件 | Standard Test Conditions |
| 04、 测试方法 | Test Method |
| 05、 规格 | Specifications |
| 06、 可靠性试验 | Reliability Test |
| 07、 可靠性试验判定 | Requirement Reliability Test Judgment |
| 08、 注意事项 | Caution for Use |
| 09、 产品外形图 | Product Outline Drawing |
| 10、 包装规范 | Packing Specification |

1、应用范围 Application

- 本说明书适用于0412电机。This specification applies to linear vibration 0412model manufactured by EVO.
- 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	25±3℃
3-2	湿度 Standard test humidity	65%±20%RH
3-3	额定输入电压 Rated Input Voltage	1.8 V rms 交流正弦 1.8 V rms AC, Sinewave
3-4	输入频率 Input Frequency	240 Hz
3-5	测试方法 Test Method	见图 1 Refer to Figure 1

4、测试方法 Test Method

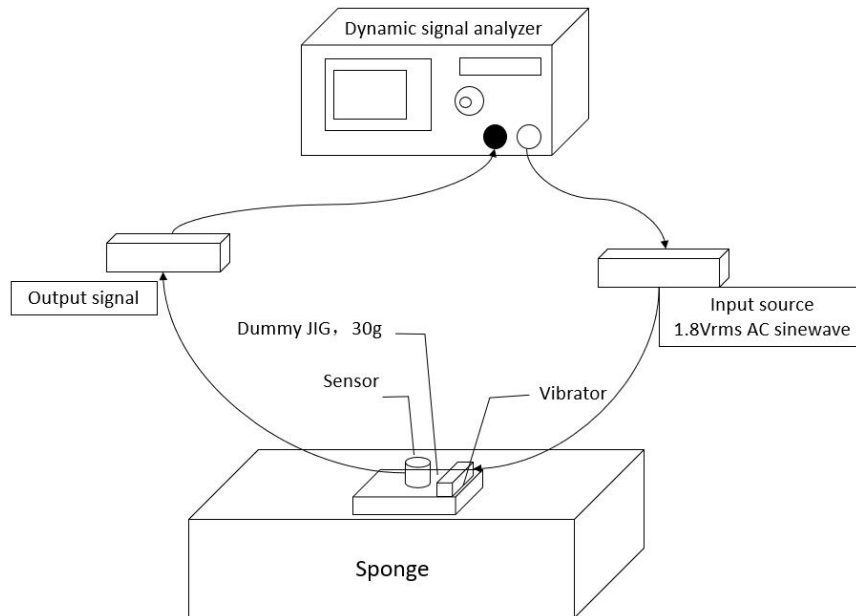


Figure 1. Test method

- 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(38mm x 38mm x 12mm) according to the figure 1.
- 工装和测试探头等的总质量为 30g
Test jig and accelerometer total weight is 30g.
- 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，测试数据取平均值。
For the precise measurement, test data is average data.
- 在不影响判定结果的情况下，测试环境温度 and 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

序号 NO.	项目 Items	规格 Specification
5-1	额定电压 Rated Voltage	1.8Vrms AC
5-2	工作电压范围 Operating voltage range	0.1-1.85Vrms AC
5-3	工作电流 Work current	65 mA Max
5-4	线圈电阻 Coil resistance	28 ± 2Ω (在 25 ± 3℃ 下)
5-5	额定频率 Rated Frequency	240Hz
5-6	谐振频率 Resonance Frequency	240 ± 15Hz
5-7	0~50%启动时间 0~50%Rise time	40ms Max
5-8	100%~50%停止时间 100%~50%Fall time	60ms Max
5-9	振动加速度 Vibration Acceleration	Input Source : Motor F0, 1.8Vrms AC, sinewave 1.0-1.5 Grms @30g
5-10	机械触摸噪音 Noise by mechanical touch	≤45dB
5-11	绝缘电阻 Insulation resistance	≥10MΩ (100V DC input, between Case and Pad)

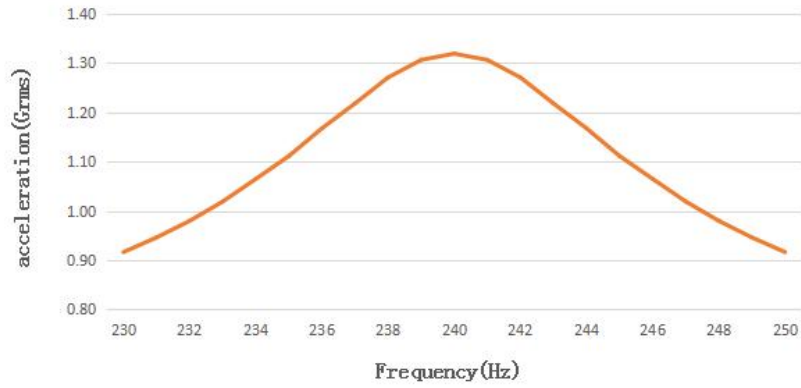


Figure 2. Frequency Response

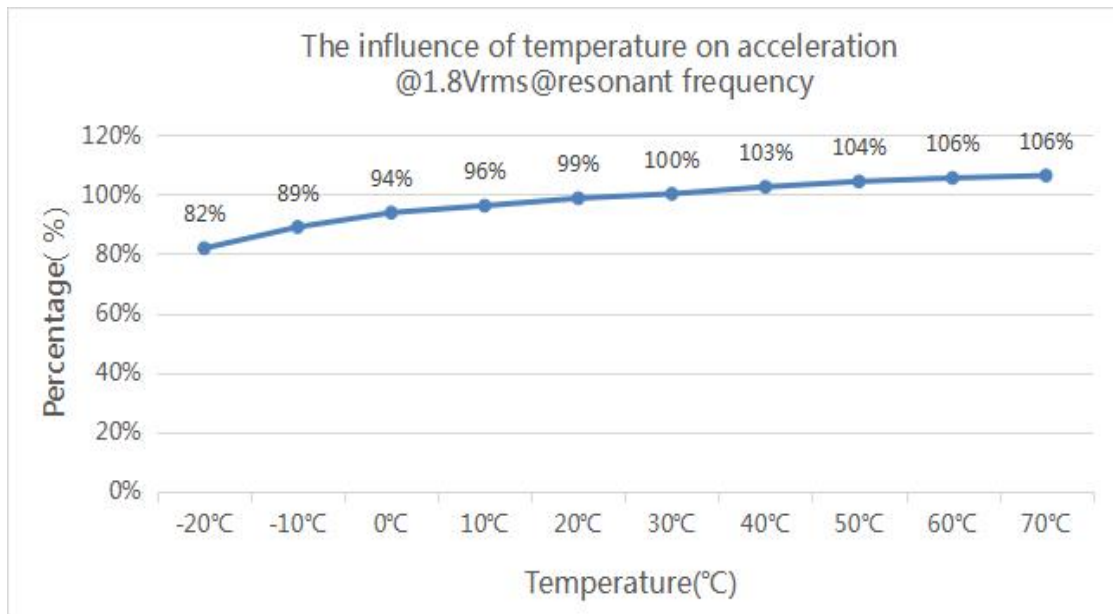


Figure 3. Temperature Test

6、可靠性试验 Reliability Test

NO. 序号	Test Item 试验项目	Test condition 试验条件	Quantity 数量
6-1	跌落实验 Drop Test	工装重量/JIG Weight: 100g 高度/ High: 0.9m/1.2m 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 100 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 30g and fall free on the concrete floor	0.9m: 10 1.2m: 10
6-2	温湿度存储 Temperature and humidity storage	38°C_95%RH_2.5 小时, 65°C_95%RH_2.5 小时, -10°C_3 小时, 5 个周期。 5 cycles of (38°C_95%RH_2.5hrs,65°C_95%RH_2.5hrs,-10°C_3hrs)	10
6-3	快速寿命试验 Quick Life Test	额定电压, 播放 WAV 文件 1 小时 (始终打开 FO) Rated voltage , 1 hr, playing a wav file (always turn on, F0)	20
6-4	温度冲击 Temperature shock	温度/Temperature: -40°C~85°C 1 个周期/1 cycle: -40°C 60min, 85°C 60min 循环周期数/Circle cycle: 50cycles	10
6-5	寿命测试加速 Life Test-Boost (Vendor only)	FSOV3.7Vpp, 160 小时, 播放一个 wav 文件 (30 毫秒开, 97 毫秒关, FO) FSOV= 3.7vpp, 160 hours, playing a wav file (30ms on, 970ms off, F0)	40
6-6	常温寿命 Life	测试电压/Voltage: 额定电压 频率/Frequency: 额定频率 1 个周期/1 cycle: 2sec ON/1sec OFF 寿命周期/life cycle: 192,000 cycles	40
6-7	滚筒试验 Tumble test	工装重量/JIG Weight: 100g 高度/ High: 1m 循环周期数/Circle cycle: 100cycles 转速为 5.5	20

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

7-1 试验完毕后在标准测试条件下放置 2 小时后再进行测试。

7-2 以下条件必须在试验结束后满足(试验条件里有另外说明的项目除外)

可靠性后 F0 变化量: 变化量 \leq 10Hz,

振动量变化: $\leq \pm 30\%$;

噪音: ≤ 45 dB(A);

其余各项基本参数满足规格书要求;

外表和结构无明显异常、腐蚀。

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 1.8V, 工作电压为 0.1~1.85V, 实际使用中马达最大驱动电压不能超过 1.85V.

Motor rated voltage is 1.8V, working voltage is 0.1~1.85V, so motor drive voltage can not exceed 1.85V.

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 30N Max), 否则将容易引起噪音.

Vibrator should be fixed to house firmly in vibrate direction (setting force 30N Max), 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.

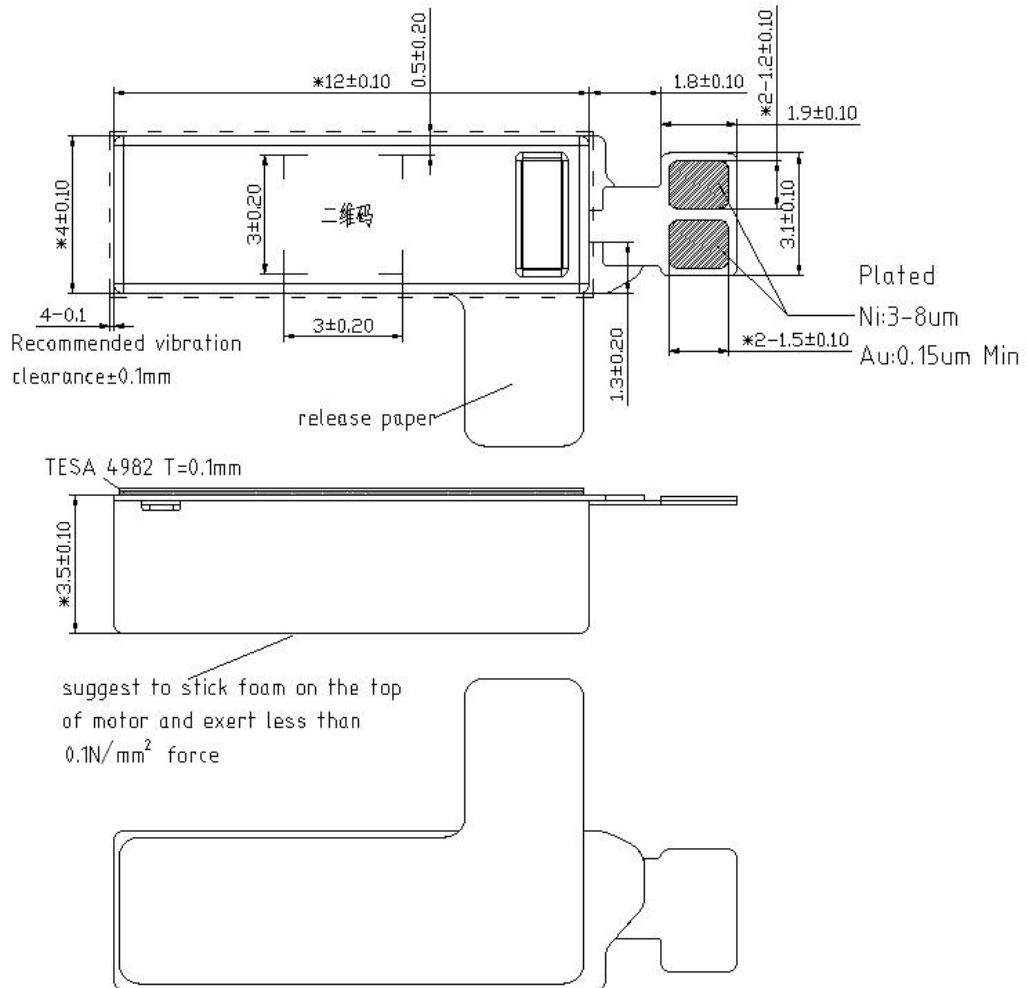
8-10 马达连续按压力需满足 4.9N Max.

The motor needs to continuously meet the pressure requirement of 4.9N Max.

8-11 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



10、包装规范 Packing Specification

10-1 一箱内包装 4000PCS 马达。

Pack 4000 pcs vibrator in a carton.

10-2 箱体规格为 455mm×275mm×185mm(4000 只装外包装)。

260mm×220mm×170mm (2000 只装内包装)。

The body specification of the case is 455mm × 275mm × 185mm(4000pcs), 260mm × 220mm × 170mm(2000pcs)

10-3 单盒为 100PCS 标准，一小箱为 20 盒 2000PCS 标准，一箱为 2 小箱 4000PCS 标准。

100pcs (1 tray), 20tray (1 bundle), 2bundle (1 carton)

10-4 箱外侧标识品名、型号、厂名。

Mark name of an article, type, quantity, weight and factory name on the outside of the carton.

包装示例 Package Demonstration

