

压电陶瓷点火器规格书

Piezoelectric Ceramic Specification

产品名称 (Product Name) : Piezoelectric Ceramic Igniter

产品型号 (Product No.) : JYYQ610-D/B4

版本号 (Version): A/0

版本 Version	日期 Date	版本更新记录 Version History Record	修订 Revision
A/0	2018-10-23	初版 Original Version	

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1.适用范围(Applicable scope)

该产品规格书仅适用于 JYYQ610-D/B4 型按压式压电陶瓷点火器。
This product specification is only applicable to JYYQ610-D/B4 igniter series

2.引用标准及规范 (Reference standards and specifications)

GB/T 191-2008 包装储运图式标志(Packaging, storage and transportation icons)
GB/T 4857.3 包装 运输包装件基本试验 第 3 部分：静载荷堆码试验方法 3
Basic tests for packaging and transport packages - Part 3: Static load stacking test method
GB/T 4857.5 包装 运输包装件 跌落试验方法(Transport packaging drop test method)
YQ/K-BZ-11-A/3 JYYQ610 系列检验标准(Series of inspection standards)

3.原理与用途(Principle and Application)

利用压电效应为理论基础、以压电陶瓷为介质而生产的手动点火装置。通过对两块压电陶瓷猛烈撞击（在按下按钮时）来产生瞬间的直流高压电弧。

A manual ignition device produced using the piezoelectric effect as the theoretical basis and using piezoelectric ceramics as the medium. An instantaneous DC high-voltage arc is created by violently striking two pieces of piezoelectric ceramic (when a button is pressed).

用于各种燃气具，如燃气灶、燃气热水器等。

They are used for various gas appliances, such as gas stoves, gas water heaters.

4.产品说明(Product Description)

4.1 此款压电陶瓷点火器是一种用来点燃燃烧气体的点火器。

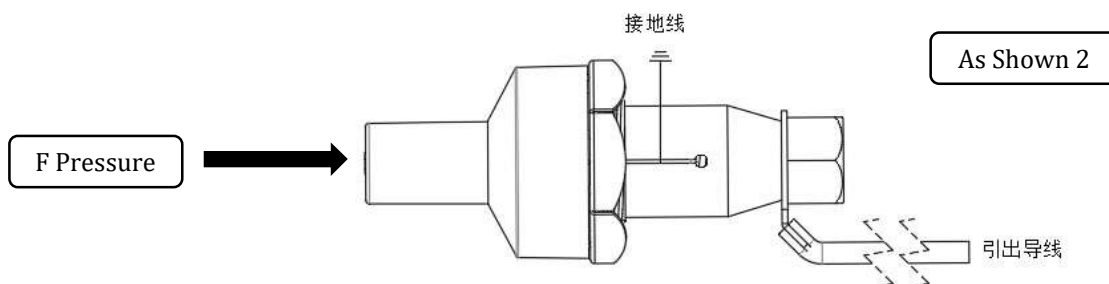
This piezoelectric ceramic igniter is an igniter used to ignite combustion gases

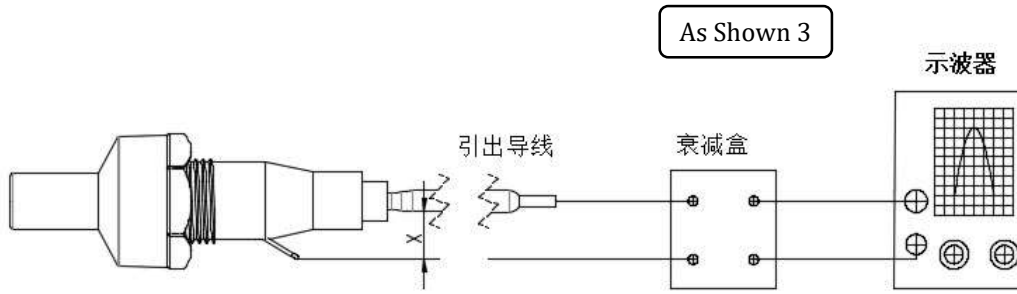
4.2 产品实物(Product Real Picture): (As Shown 1)



As Shown1 : JYYQ610-D/B4 型实物图片

4.3 安装要求(Installation Requirements)





安装检测示意图
Installation Schematic

4.3.1 安装环境不能有腐蚀性气体，在规定的范围内使用；

The installation environment must be no corrosive gases and must be used in specified environments.

4.3.2 安装时产品必须接地；

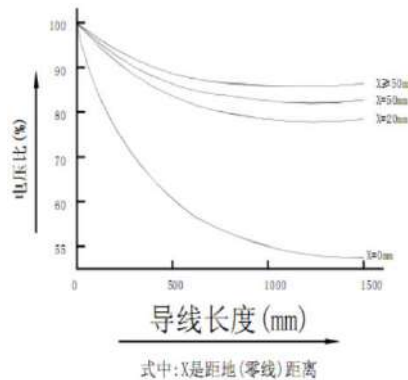
The product must be grounded during installation

4.3.3 引出端如接点火瓷针，其针尖的放电距离要求控制在 4-5mm；

If the lead end is connected to an ignition needle, the discharge distance of the needle tip is required to be controlled at 4-5mm;

4.3.4 引出端导线长度 L 与电压是反比例关系，如图 4 所示；

The lead-out end wire length L is inversely proportional to the voltage, as shown 4



As shown 4

4.3.5 导线离地线越近，电压衰减越大，如图 3 所示；

The closer the wire is to the ground wire, the greater the voltage attenuation, as shown 3;

4.3.6 按压打击时，力的方向须垂直；如图 2 所示；

When pressing and striking, the direction of force must be vertical; as shown 2;

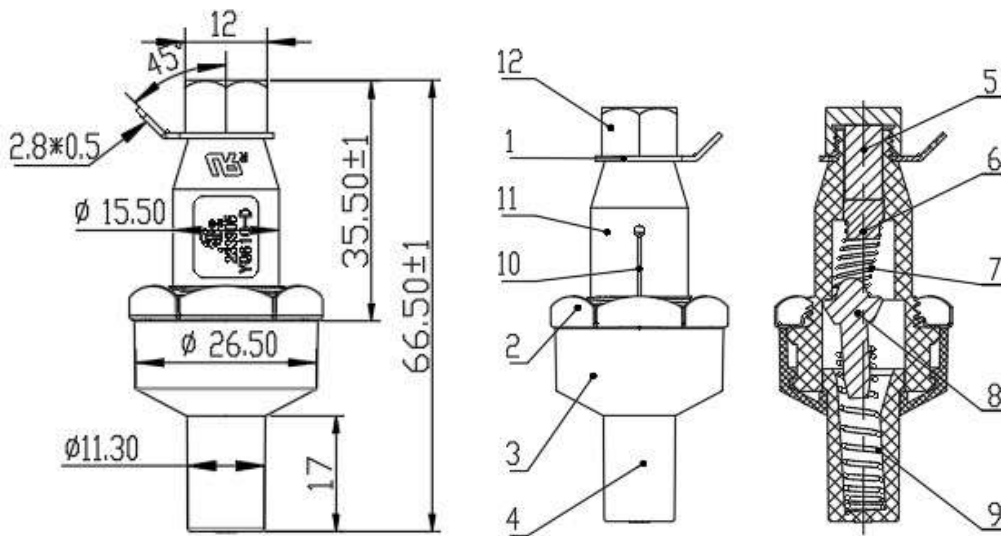
4.3.7 引出端导线长度对电压的影响，如下表

The effect of wire length on voltage is as shown in the table 1 below

Table 1

导线长度 mm	0	100	200	300	400	500	600	700	800	900	1000	1100	0-1000 衰减率
点火器 1 电压 kV	18.9	18.3	17.7	17.2	16.8	16.5	16.1	15.9	15.6	15.4	15.3	15	20.63%
点火器 2 电压 kV	17.7	17.1	16.7	16.2	16.1	15.8	15.3	15.1	14.7	14.2	14.1	13.7	22.60%

5. 结构与配合尺寸(Structure and Dimensions)



As Shown 5 : JYYQ610-D/B4 Drawing

AS Shown 6 : JYYQ610-D/B4 Structure

表 2 点火器组装结构说明

Table 2 Assembly structure instructions

No.	Part Name	Part Spec	Qty
1	点火片- Ignition tablet	YQ610-DH	1
2	固定螺母 Fixing nut	YQ610-24M	1
3	盖帽 Cover	YQ610-3GM	1
4	按钮 Button	YQ610-3AN	1
5	压电晶体 piezoelectric crystal	686# φ6*12	1
6	铁头-Iron Head	YQ610-5TT-W	1
7	复位弹簧 Reset Spring	YQ610--F-2	1
8	击锤 Hammer	YQ610-JC-2	1
9	打击弹簧 Strike Spring	YQ610-G-2	1
10	接地线 Grounding wire	YQ610-2JDX-W	1
11	外壳 Out case	YQ610-D-WK	1
12	螺母 Nut	YQ610-D-2M	1
13	填充胶 Filling Gule	YQ610-E-F	1

6. 产品要求 Product requirement

表 3 产品要求(Table 3 Products Requirements)

No.	项目	说明	备注
1	外观要求 Appearance	产品外观良好, 无破损、污渍、毛刺等。 The product looks good, without damage, stains, burrs, etc.	
2	结构 Structure	1)产品尺寸应符合(图 5)中标注的尺寸要求; The product size should meet the size requirements marked in (As Shown 5) 2)各使用部件需符合(表 2) 中要求。 Each part must meet the requirements in (Table 2)	
3	机械性能 Mechanical Performance	按压顺畅无卡涩, 按压操作力: $\leq 4.5\text{KG}$; Press smoothly without jamming, pressing operation force: $\leq 6\text{kg}$;	检测仪器: 立式测力计 Testing instrument: Vertical dynamometer
4	产品性能 Product Performance	测试 1.初始输出电压: 打击 5 次最小值 $\geq 13.0\text{KV}$; Initial output voltage: 5 blows, minimum value $\geq 13\text{KV}$ 测试 2.测试点火距离 5mm,打击 10 次不断火。 The test ignition distance is 5mm, and the fire continues after 10 blows.	检测仪器: Tektronix TDS2002 示波器 (Oscilloscope) Tektronix P6015A 分压器 High-voltage divider
5	耐久 Durability test	1.环境温度: 25°C 左右, 环境湿度: $\leq 70\%\text{RH}$; Environment Temp: 25°C , Humidity: $50-70\%\text{R.H}$, 2.打击频率: ≤ 30 次/分钟, 耐久次数: 12000 次; Hitting Fr: $\leq 30\text{times/ min}$, totally : 12000times 3.耐久后输出电压(Output Voltage after Durability): ①打击 5 次平均值 $\geq 11\text{KV}$ The average 5times hitting, Voltage $\geq 11\text{KV}$ ②测试点火距离 5mm,打击 10 次断火次数 ≤ 2 次 The test ignition distance is 5mm, and the number of fire breaks is ≤ 2 times after 10 consecutive strikes.	检测仪器: YQ610 耐久机火炬夹具 Adjustable torch clam
6	绝缘性 Insulation	在常温下, 导体通过 500V 直流电, 导体和绝缘层之间的阻抗 $\geq 100\text{M}\Omega$ 。 At normal temperature, the conductor passes 500V DC, and the impedance between the conductor and the insulation layer is $\geq 100\text{M}\Omega$.	检测仪器: 数字兆欧计 Testing instrument: digital megger Meter
7	抗潮湿性	在 $60^{\circ}\text{C}/95\%$ 潮湿条件下经过 1 小时后, 输出电压下降 $\leq 20\%$; 恢复到室温时, 输出电压衰减率 $\leq 15\%$ 。 After 1 hour under $60^{\circ}\text{C}/95\%$ humidity conditions, the output voltage attenuation rate is $\leq 15\%$ after returning to room temperature.	检测仪器: 恒温恒湿试验箱 Testing instrument: constant temperature and humidity test chamber
8	抗冷热性	在最大 120°C 环境下放置 1 小时的条件下塑胶件无明显外部变化, 恢复到正常温度后, 输出电压衰减率 $\leq 15\%$; 在最小 -20°C 环境下放置 1 小时的条件下塑胶件无明显外部变化, 恢复到正常温度后, 输出电压衰减率 $\leq 15\%$ 。 The plastic parts have no obvious external changes when it is placed in the Max. 120°C environment for 1 hour. After returning to normal temperature, the output voltage attenuation rate is $\leq 15\%$; the plastic parts have no obvious external changes when it is placed in the Min. -20°C environment for 1 hour. After external changes, after returning to normal temperature, the output voltage attenuation rate is $\leq 15\%$.	检测仪器(Testing equipment) 1.干燥箱(Drying box) 2.恒温恒湿试验箱 Constant temperature and humidity test chamber

7. 包装要求(Packaging Requirements)

7.1 若客户无特别要求，均按如下包装方法包装:

If the customer has no special requirements, they are packaged according to the following packaging methods

7.2 主要材料 (Main Material): 双坑纸箱(Carton);

7.3 外箱尺寸 (Carton Dimension) : 410mm×340mm×150mm;

7.4 包装数量(Package Qty): 500pcs/CTN

7.5 在外箱上正确填写好“产品型号”、“数量”、“产品批号”的信息.

(Correctly fill in the information of "product model", "quantity" and "product batch number" on the outer carton.)

8. 产品注意事项(Product Notes)

8.1 在运输、安装过程中，较强的振动和碰撞都会使点火系统出异常，影响点火性能;

In the process of transportation and installation, strong vibration and collision will make the ignition system abnormal and affect the ignition performance;

8.2 搬运时应严禁滚动、抛掷和手钩作业.

Rolling, throwing and hand hooking operations are strictly prohibited during handling;

8.3 产品应放置在干燥通风、周围无腐蚀性气体的仓库内，且外箱堆码不应超过 5 层.

The product should be placed in a dry and ventilated warehouse without corrosive gas around, and the outer box should not be stacked more than 5 layers;

8.4 在安装使用过程中严禁高强度外力挤压导致点火器变形，安装需完全固定至点火器不晃动;

During installation and use, it is strictly forbidden to deform the igniter due to high-intensity external force extrusion. The installation must be completely fixed until the igniter does not shake;

8.5 引出导线需与点火器连接紧密无缝隙，且尽量减少导线与金属接触面积，将电压衰减率降至最低，利于点火。

The lead wire must be tightly connected to the igniter without gaps, and the contact area between the wire and metal should be minimized to minimize the voltage attenuation rate, which is beneficial to ignition.