



# 电子元器件规格书 RELAY SPECIFICATION

器件名称 Name :	继电器 (RoHS) RELAY
型号规格 Product Name:	MPI-S-112-C-3 (0.4W 16A)
客户名称 Customer:	
客户编码 Customer Number:	
版本 Version:	V1.0

## (客户批准) Customer Approval

(盖章处) STAMPING AREA

批准 Approved By	审核 Checked By	编制 Created By
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注意事项(Remarks: ):

- 1、本规格书双方签字后正式生效，本规格书连同封面共 12 页；

(Specification come into force after signed by both parties. Total 12 pages)

- 2、本规格书一式两份，版本由使用方与供方共同维护；

Two copies of this specification, maintained by both parties.

- 3、任何对内容的改动必须经双方同意，并以书面文件的形式发布。

Any changes must agreed by both parties, and publish the form of a written document.

本规格书有中英文两种版本。如有冲突，以中文版本为准，英文版本则为参考。(This specification is made out in both Chinese and English versions. We hereby set Chinese version as standard and English version as a reference if any conflicts occur.)



**变更记录Update records**

序号	更改内容	更改原因	更改时间	责任人
No.	Change Contents	Change Reason	Date	person

**一 浙江美硕继电器认证类型及认证号 Approvals type and approvals number**

1.1	CQC certificate	CQC15002122984
1.2	UL certificate	E358149
1.3	TUV certificate	R50302776

**二 线圈参数 Coil Specification**

2.1	额定电压 Rated voltage	12VDC
2.2	线圈电阻 Coil resistance	360Ω±10% (at 23±1℃)
2.3	额定功率 Rated power	0.4W
2.4	最大允许电压 Max.allowable voltage	18VDC

**三 触点参数 Contact Specification**

3.1	触点额定参数 Contact rating	NO:16A 250VAC NC:8A 250VAC
3.2	最大切换电流 Max.Switching current	16A
3.3	最大触点容量 Max. contact capacity	4000VA
3.4	最小适用负载 Min. Applicable Load	1A 6VDC

**四 操作性能 Operate Performances**

4.1	接触电阻 Contact resistance	≤100mΩ (1A 6VDC)
4.2	吸合电压 Operate voltage	≤9.0VDC
4.3	释放电压 Release voltage	≥0.6VDC
4.4	吸合时间 Operate time	≤15ms
4.5	释放时间 Release time	≤8ms

**五 寿命要求 Life Requirements**

5.1	电气寿命 Electrical Life	100,000 次, 常温条件, 阻性负载, 动作频率: 6 次/分钟, 10%占空比, 负载: 1 秒通 9 秒断 100,000 cycle Normal temperature condition, resistive load, Action frequency: 6 times / min, 10% duty cycle, 1 second NO 9second NC
5.2	机械寿命 Mechanical Life	1,000,000 次, (无负载, 300 次/分钟) 100,000 cycle ,No load,300 cycles/minute

**六 安全及环境性能要求**
**Safety and environmental performance requirements**

6.1	存储条件 Storage Condition	温度: -20~+40℃, 湿度: 20%~85%RH Temperature: -20~+40℃, Humidity: 20%~85%RH
6.2	使用条件 Use Condition	温度: -40~+85℃, 湿度: 20%~85%RH Temperature: -40~+85℃, Humidity: 20%~85%RH
6.3	安装方向 Installation direction	端子向下 Terminal down
6.4	绝缘电阻 Insulation resistance	断开触点间、触点和线圈间: 1000MΩ Min (500VDC) Open contacts、Contacts and coil:1000MΩ Min (500VDC)
6.5	介质耐压 Dielectric Strength	断开触点间: 1000VAC (1mA) (50/60Hz)1Min Open contacts: 1000VAC (1mA) (50/60Hz)1Min 触点和线圈间: 5000VAC (1mA) (50/60Hz)1 Min Contacts and coil: 5000VAC (1mA) (50/60Hz)1 Min
6.6	引出脚强度 Lead-outfoot strength	在垂直于引出脚方向上施加 15N 的拉力 6s, 继电器应无异常。 The relay shall not be abnormal if a 15N pull force of 6S is applied perpendicular to the direction of the lead pin.
6.7	耐振动性 Vibration resistance	6.7.1耐久振动: 在振动为双振幅1.5mm、无励磁的状态时、以振动频率10~55Hz/分的振荡在XYZ的各方向上进行2小时后, 在外观、构造、性能上应没有异常。 Durable vibration When the vibration is a double amplitude of 1.5 mm or less, the oscillation at a vibration frequency of 10 to 55Hz / minute is performed for 2 hours in each direction of the XYZ, and there is no abnormality in appearance, configuration, and performance.
		6.7.2误动作振动: 在振动为双振幅1.5mm、励磁的状态时、以振动频率为10~55 Hz/分的振荡在XYZ的各方向

		<p>上进行5分钟时，实验中应没有误动作。实验后在外观、构造、性能上应没有异常。</p> <p><b>Malfunctioning vibration</b> When the vibration is a double amplitude of 1.5 mm and the excitation state is performed, the oscillation at a vibration frequency of 10 to 55 Hz / minute is performed for 5 minutes in each direction of the XYZ, and there is no malfunction in the experiment. After the experiment in appearance, structure, performance should be no exception.</p>
6.8	耐冲击性 Impact resistance	<p><b>6.8.1 耐久冲击：</b>在无励磁的状态下，以加速度为1,000m/s<sup>2</sup>的冲击在XYZ的各方向进行5次后，在外观、构造、性能上应没有异常。</p> <p><b>Durable impact</b> In the absence of excitation, the acceleration of 1,000m / s<sup>2</sup> in the XYZ in the direction of the five times, in the appearance, structure, performance should be no exception.</p>
		<p><b>6.8.2 误动作冲击：</b>在励磁的状态时、以加速度为200m/s<sup>2</sup>的冲击在XYZ的各方向进行2次时，实验中应没有误动作。实验后在外观、构造、性能上应没有异常。</p> <p><b>Malfunctioning</b> In the state of excitation, when the acceleration of 200m / s<sup>2</sup> in the XYZ in the direction of the two times, the experiment should be no malfunction. After the experiment in appearance, structure, performance should be no exception.</p>
6.9	耐低温性 Low temperature resistance	<p><b>6.9.1 使用时耐低温：</b>将没有外加电压和电流的继电器放入温度为-40±2℃的恒温槽内连续保持2小时后、在保持原状态的同时对实验回路外加额定电压进行实验时，继</p>

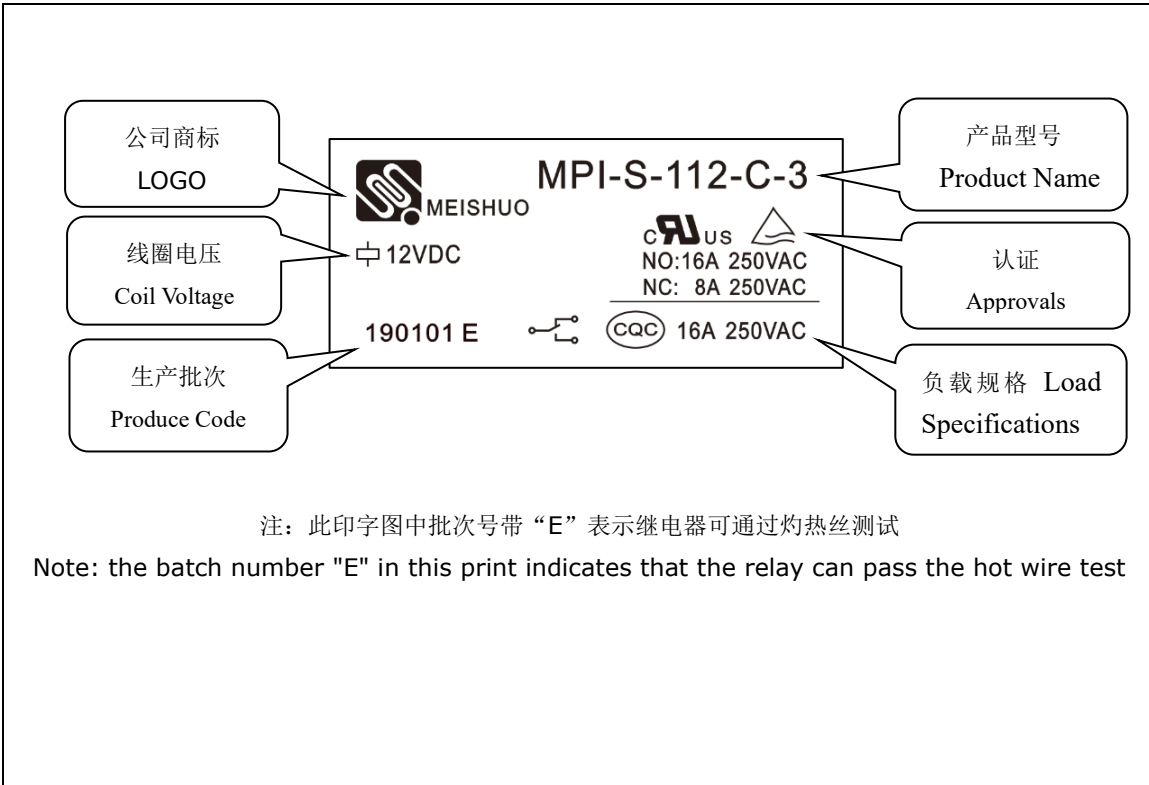
		<p>电器能正常动作。(在0℃时不结冰状态)</p> <p>Use low temperature when used The relay will be able to move normally when the rated voltage is applied to the experimental circuit while maintaining the original state for 2 hours in a constant temperature tank with no voltage and current applied to the temperature of <math>-40 \pm 2 \text{ }^{\circ}\text{C}</math>. (No ice at <math>0^{\circ}\text{C}</math>)</p> <p>6.9.2 贮存时耐低温性：将继电器放入温度为<math>-20 \pm 2^{\circ}\text{C}</math>的恒温槽内连续保持72小时后，移放入常温常湿的地方，擦去水滴，放置1~2小时，随后检查其构造、动作、绝缘电阻、介电性能，应没有异常。</p> <p>Low temperature resistance when stored The relay placed in the temperature of <math>-20 \pm 2 \text{ }^{\circ}\text{C}</math> constant temperature tank for 72 hours, then moved to the room temperature and humidity, wipe the water droplets, put 1 to 2 hours, then check its structure, action, insulation resistance, Dielectric properties should be no exception.</p>
6.10	耐高温性 High temperature resistance	<p>6.10.1使用时耐高温性 在继电器的控制回路上加额定电压、主回路通额定电流的状态下，将其放入<math>85 \pm 2^{\circ}\text{C}</math>的恒温槽内连续2小时后，在保持原状态的同时对实验回路进行开关实验时，继电器应能正常动作。</p> <p>Use high temperature resistance In the relay control circuit plus rated voltage, the main circuit through the rated current state, put it into the <math>85 \pm 2 \text{ }^{\circ}\text{C}</math> constant temperature tank for 2 hours, while maintaining the original state of the experimental circuit for the switch test, The relay</p>

		<p>should be able to operate normally.</p> <p>6.10.2贮存时耐高温性 将继电器放入温度为<math>40\pm 2^{\circ}\text{C}</math>的恒温槽内连续保持72小时后，移放入常温常湿的地方，擦去水滴、放置1~2小时，随后检查其构造、动作、绝缘电阻、介电性能、应没有异常。</p> <p>High temperature resistance when stored The relay placed in the temperature of <math>40 \pm 2^{\circ}\text{C}</math> constant temperature tank for 72 hours, then transferred to the room temperature and humidity, wipe the water droplets, put 1 to 2 hours, then check its structure, action, insulation resistance, mediated Electrical performance should be no exception.</p>
6.11	耐湿性 Moisture resistance	<p>6.11.1将继电器放入温度为<math>40\pm 2^{\circ}\text{C}</math>、相对湿度为90~95%的环境里连续保持48小时后，移到常温常湿的地方放置1小时以上、2小时以内后检查其构造、动作、绝缘电阻、介电性能，应没有异常。</p> <p>The relay placed in the temperature of <math>40 \pm 2^{\circ}\text{C}</math>, relative humidity of 90 ~ 95% of the environment for 48 hours in a row, moved to room temperature and humidity place for 1 hour or more, 2 hours after the check its structure, action, insulation Resistance, dielectric properties, should be no exception.</p>
6.12	可焊性 Solderability	<p>6.12.1 <math>235\pm 5^{\circ}\text{C}</math>, <math>3\pm 1\text{s}</math> (有铅焊接); <math>260\pm 5^{\circ}\text{C}</math>, <math>3\pm 1\text{s}</math> (无铅焊接), 90%以上引脚面积覆锡。</p> <p>(<math>235\pm 5^{\circ}\text{C}</math>, <math>3\pm 1\text{s}</math>, Leaded soldering, <math>260\pm 5^{\circ}\text{C}</math>, <math>3\pm 1\text{s}</math>, No Leaded soldering, More than 90% of the lead area of tin.)</p>

6.13	阻燃性 Flame retardancy	<p>6.13.1 按照IEC60695-2-11灼热丝测试要求中的750℃灼热丝可燃性试验方法,外壳和基座在灼热丝接触测试面的过程中火焰持续时间不超过2秒。</p> <p>According to IEC 60695-2-11 burning wire test requirements in the 750 °C glow wire flammability test method, the case and the base in the glow wire contact test surface in the process of flame duration of not more than 2 seconds.</p>
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七 厂家型号及型号含义、丝印图案及各部位含义说明（体现厂家、批号、认证等）

**Manufacturer P/N ,Meaning of P/N, Printing and remarks**



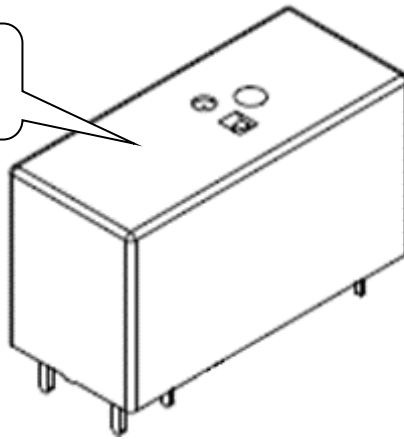
The diagram shows a relay label with the following markings and their corresponding callouts:

- 公司商标 LOGO**: Points to the Meishuo logo.
- 线圈电压 Coil Voltage**: Points to "中 12VDC".
- 生产批次 Produce Code**: Points to "190101 E".
- 产品型号 Product Name**: Points to "MPI-S-112-C-3".
- 认证 Approvals**: Points to the UL and CQC certification marks.
- 负载规格 Load Specifications**: Points to "NO:16A 250VAC" and "NC: 8A 250VAC".

注：此印字图中批次号带“E”表示继电器可通过灼热丝测试  
Note: the batch number "E" in this print indicates that the relay can pass the hot wire test



印字面  
(Printing side)



MPI	-S:塑封型	-1:1 组	12:12VDC	-C:Form C (转换)	-3:1 组, 5.0 脚 距, 16A
MPI	-S:Sealed	-1:1 Groups	12:12VDC	-C:Form C (NO/NC)	-3:1 groups 5.0mm 16A
A: 型号	B: 封装形式	C: 触点组数	D: 线圈规格	E: 触点形式	F: 结构形式
A: Model	B: Structure	C: Contact Groups	D: Coil Voltage	E: Contact Arrangement	F: Contact Form

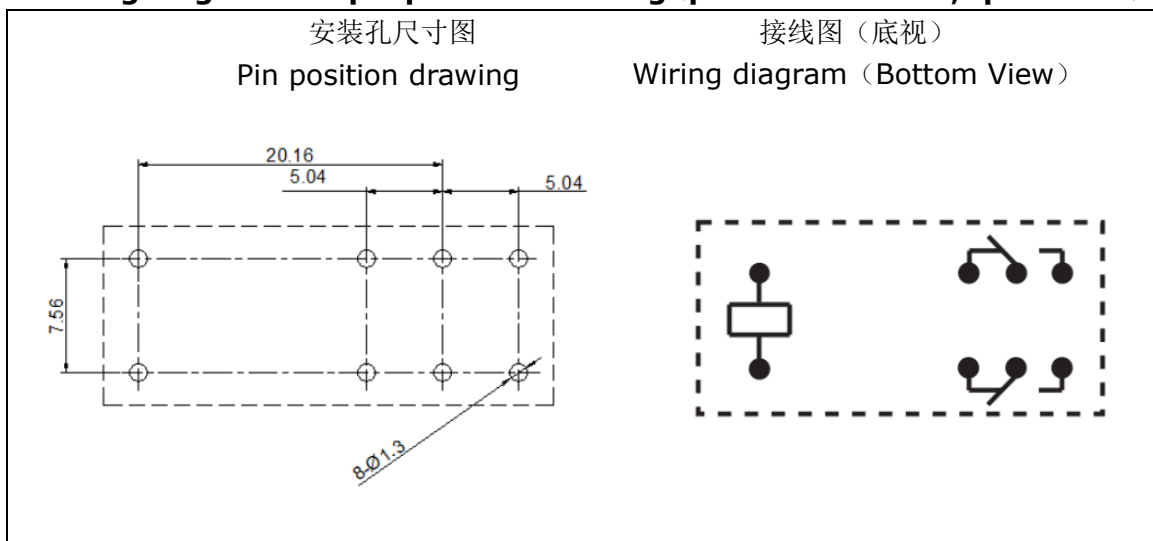
### 八 生产批号标识(Produce Code) XX XX XX (

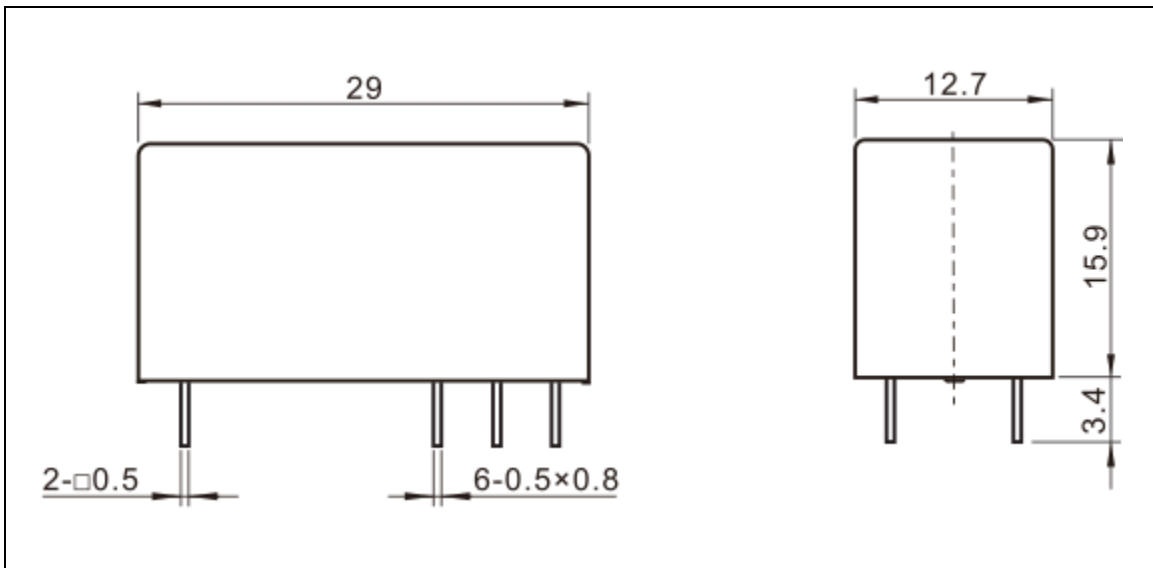
1 2 3

- 1、年份批号(Year) (10-2010, ……)
- 2、月份编号(Month) (01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12)
- 3、流水批号(Serial number) (01, ……)

### 九 接线及装配尺寸图(孔距公差±0.2mm, 孔径公差±0.1mm)

**Wiring diagram and pin position drawing (pin distance±0.2, Apert ±0.1)**



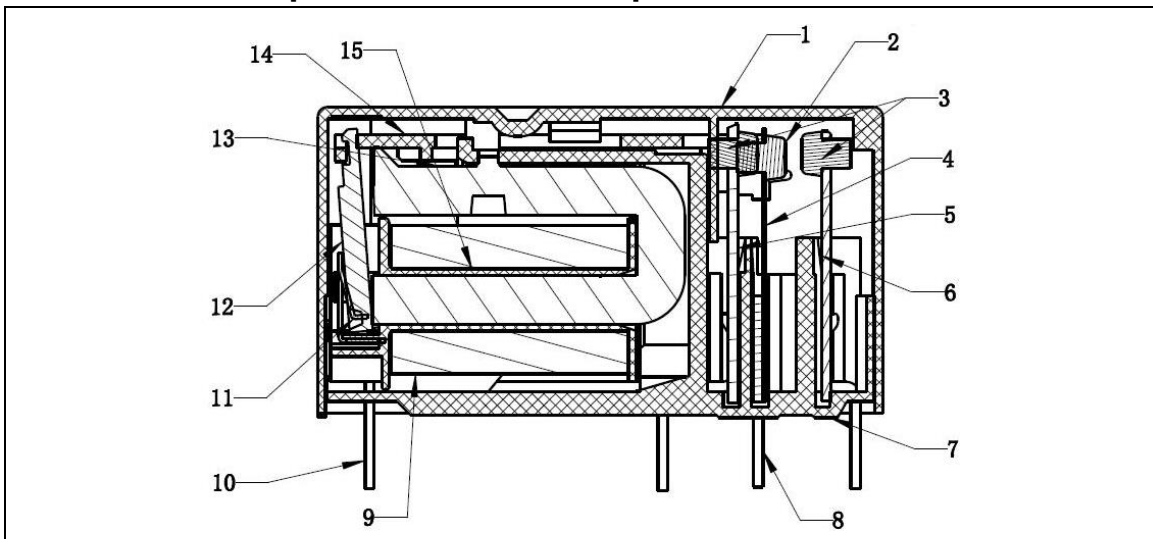
**十 外观尺寸图 Outline Dimensions**


备注：外形图中产品部分未注公差尺寸，当尺寸 $\leq 1\text{mm}$ ，公差为 $\pm 0.2\text{mm}$ ；  
 当尺寸在 $1\sim 5\text{mm}$ ，公差为 $\pm 0.3\text{mm}$ ；当尺寸 $> 5\text{mm}$ ，公差为 $\pm 0.4\text{mm}$ 。

Note:

The tolerance dimension of the product parts in outline drawing is  $\leq 1\text{mm}$ , tolerance is  $\pm 0.2\text{mm}$ ;

When the dimension is  $1\sim 5\text{mm}$ , the tolerance is  $\pm 0.3\text{mm}$ ; When size  $> 5\text{mm}$ , tolerance is  $\pm 0.4\text{mm}$ .

**十一 主要零部件 Important Part And Components**


序号 (NO.)	零件名称	Part Name	序号 (NO.)	零件名称	Part Name
1	外壳	Case	9	漆包线	Insulation wire
2	动点	Moveable Contact	10	引线针	Coil-Terminal
3	静点	Stationary Contact	11	压簧	Hinge

4	动簧片	Moving spring	12	衔铁	Armature
5	常闭静簧脚	NC Stationary Terminal	13	铁芯 (U型)	Core (U type)
6	常开静簧脚	NO Stationary Terminal	14	推杆	Card
7	基座	Base	15	线圈架	Bobbin
8	动簧脚	Mobile Terminal			

## 十二 零部件品牌、参数、成份等

### component brand, parameters, ingredients, etc

序号 (No.)	零件名称 (Part Name)	材料 (Material)	供应商(Supplier)
1	外壳 Case	工程塑料 Plastic	宝理/新光/杜邦/三菱/南通 (Polyplastics / Shin Kong / DuPont / Mitsubishi / Nantong)
2	动点 Moveable Contact	银合金 Silver alloy	福达/聚星/格林/宁波电工 (Foodar/ multiple star / Green / Ningbo Electrician)
3	静点 Stationary Contact	银合金 Silver alloy	福达/聚星/格林/宁波电工 (Foodar/ multiple star / Green / Ningbo Electrician)
4	动簧片 Moving spring	铜合金 Copper alloy	鑫科/三菱/兴业/博威 (Xin Branch / Mitsubishi / Industrial / Broadway )
5	常闭静簧脚 NC Stationary Terminal	铜合金 Copper alloy	鑫科/三菱/兴业/博威(Xin Branch / Mitsubishi / Industrial / Broadway )
6	常开静簧脚 NO Stationary Terminal	铜合金 Copper alloy	鑫科/三菱/兴业/博威 (Xin Branch / Mitsubishi / Industrial / Broadway )
7	基座 Base	工程塑料 Plastic	宝理/新光/杜邦/三菱/南通(Polyplastics / Shin Kong / DuPont / Mitsubishi / Nantong)
8	动簧脚 Mobile Terminal	铜合金 Copper alloy	鑫科/三菱/兴业/博威 (Xin Branch / Mitsubishi / Industrial / Broadway )
9	漆包线 Insulation wire	3UEW	蓉胜/一致/益利素勒/富士(Ronsen/Yichi/ Elektrisola/FUJI)
10	引线针 Coil-Terminal	铜包钢 Copper clad steel	跃兴/宏福 (Yuexing /Hongfu)
11	压簧	铜合金	鑫科/三菱/兴业/博威

	Hinge	Copper alloy	(Xin Branch / Mitsubishi / Industrial / Broadway )
12	衔铁 Armature	电工纯铁 Electrician pure iron	太钢/鞍钢/宝钢(TISCO/ANSTEEL/BAOSTEEL)
13	铁芯(U型) Core (U type)	电工纯铁 Electrician pure iron	太钢/鞍钢/宝钢(TISCO/ANSTEEL/BAOSTEEL)
14	推杆 Card	工程塑料 Plastic	宝理/杜邦/飞利浦/住友 (Polyplastics / DuPont / Philips / Sumitomo)
15	线圈架 Bobbin	工程塑料 Plastic	宝理/新光/杜邦/三菱/南通(Polyplastics / Shin Kong / DuPont / Mitsubishi / Nantong)

### 十三 来料包装形式 packaging

13.1	来料包装形式 Incoming packaging	内包装用塑盒(管)包装,外包装用牢固的纸箱包装。 The inner packaging is packed in plastic box or tube, wrapped in a solid carton
13.2	运输规定 Shipping regulations	产品运输过程中应注意防止重压、跌落、防潮和防热。 During product transportation, care should be taken to prevent heavy pressure, dropping, moisture and heat.

### 十四 厂家扫描版本附件 Factory scan version of the annex 无 NIL