



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-105-A-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):

- 本规格书双方签字后正式生效，本规格书连同封面共 10 页；
(Specification come into force after signed by both parties. Total 10 pages)
- 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.
- 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 浙江美碩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	5VDC
2.2	线圈电阻 Coil resistance	62Ω±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	7.5V

三 触点参数 Contact Specification

3.1	触点额定参数 Contact rating	16A 250VAC
3.2	最大切换电流 Max.Swicing 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	≤3.75VDC
4.3	释放电压 Release voltage	≥0.25VDC
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 on 9 second off
5.2	机械寿命 Mechanical Life	1,000,000 次, (无负载, 300 次/分钟) 1,000,000 cycle ,(No load,300 cycles/minute)

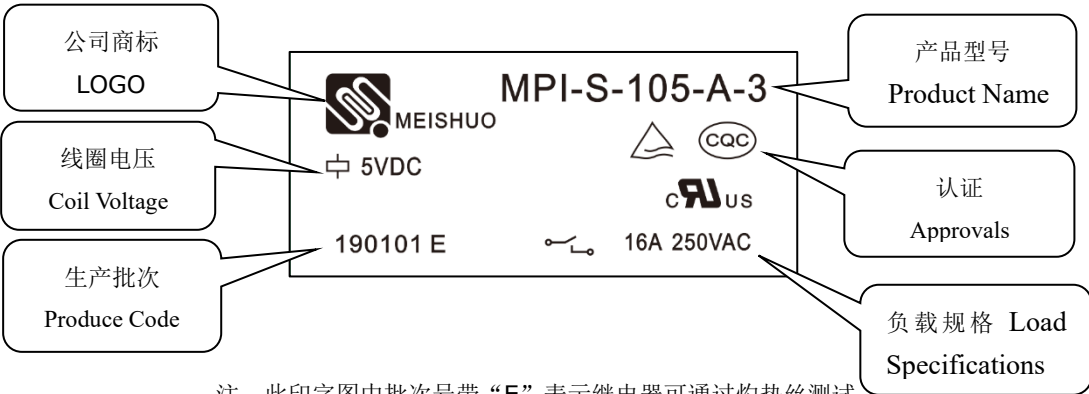
六 安全及环境性能要求
Safety and environmental performance requirements

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 的各方向上

		<p>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>Malfunctioning vibration 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	<p>耐冲击性 Impact resistance</p>	<p>6.8.1 耐久冲击：在无励磁的状态下，以加速度为 1,000m/s² 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>Durable impact In the absence of excitation, the acceleration of 1,000m / s² in the XYZ in the direction of the five times, in the appearance, structure, performance should be no exception.</p> <p>6.8.2 误动作冲击：在励磁的状态时、以加速度为 200m/s² 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>Malfunctioning In the state of excitation, when the acceleration of 200m / s² 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	<p>耐低温性 Low temperature resistance</p>	<p>6.9.1 使用时耐低温：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 -40 ± 2 °C. (No ice at 0°C)</p> <p>6.9.2 贮存时耐低温性：将继电器放入温度为-20±2℃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 -20 ± 2 °C constant</p>

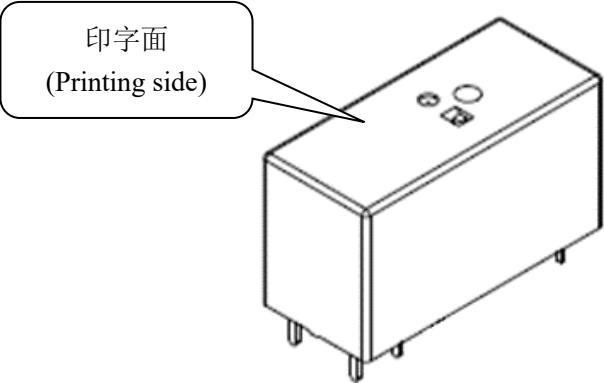
		temperature tank for 72 hours, then moved to the room temperature and humidity, wipe the water droplets, put 1 to 2 hours, then check its structure, action, insulation resistance, Dielectric properties should be no exception.
6.10	耐高温性 High temperature resistance	<p>6.10.1 使用时耐高温性 在继电器的控制回路上加额定电压、主回路通额定电流的状态下,将其放入 $85 \pm 2^\circ\text{C}$ 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 $85 \pm 2^\circ\text{C}$ constant temperature tank for 2 hours, while maintaining the original state of the experimental circuit for the switch test, The relay 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 $40 \pm 2^\circ\text{C}$ 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 $40 \pm 2^\circ\text{C}$ 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 $40 \pm 2^\circ\text{C}$、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 $40 \pm 2^\circ\text{C}$, 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 $235 \pm 5^\circ\text{C}$, $3 \pm 1\text{s}$ (有铅焊接); $260 \pm 5^\circ\text{C}$, $3 \pm 1\text{s}$ (无铅焊接), 90% 以上引脚面积覆锡。</p> <p>($235 \pm 5^\circ\text{C}$, $3 \pm 1\text{s}$, Leaded soldering, $260 \pm 5^\circ\text{C}$, $3 \pm 1\text{s}$, No Leaded soldering, More than 90% of the lead area of tin.)</p>

6.13	阻燃性 Flame retardancy	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。 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.
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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


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



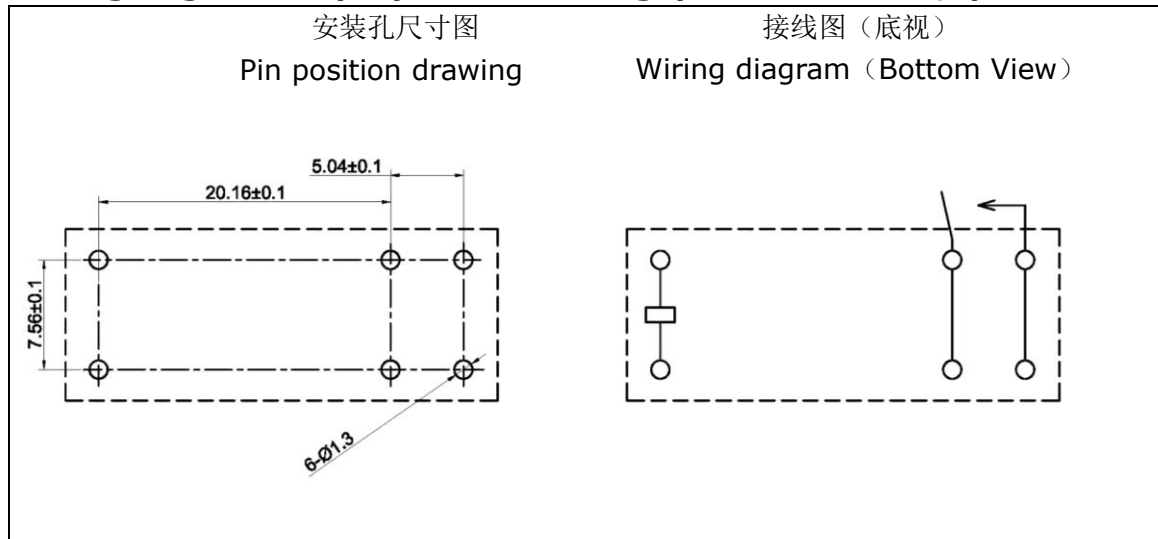
MPI	-S: 塑封型	-1:1 组	05:5VDC	-A:Form A (常开)	-3:1 组, 5.0 脚距, 16A
MPI	-S:Sealed	-1:1Groups	05:5VDC	-A:Form A (NO)	-3:1 groups 5.0mm 16A
A: 型号	B: 封装形式	C: 触点组数	D: 线圈规格	E: 触点形式	F: 结构形式
A: Model	B: Structure	C: Contact Groups	D: Coil Voltage	E: Contact Arrangement	F: Contact Form

八 生产批号标识(Produce Code) XX XX XX (1 2 3)

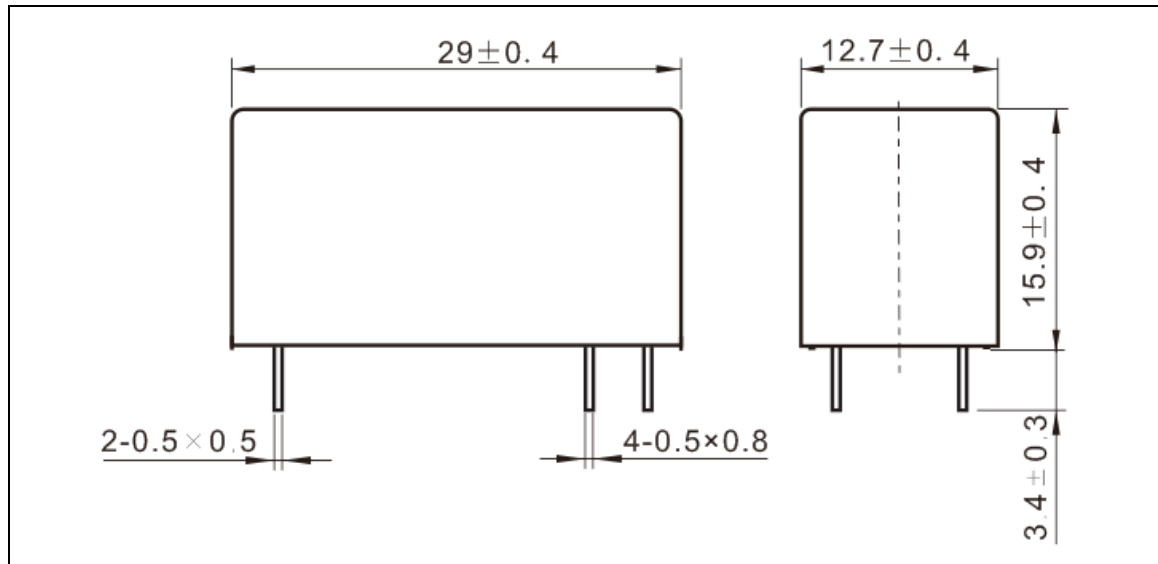
- 1、年份批号(Year) (10-2010, ……)
- 2、月份编号(Month) (01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12)
- 3、流水批号(Serial number) (01, ……)

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

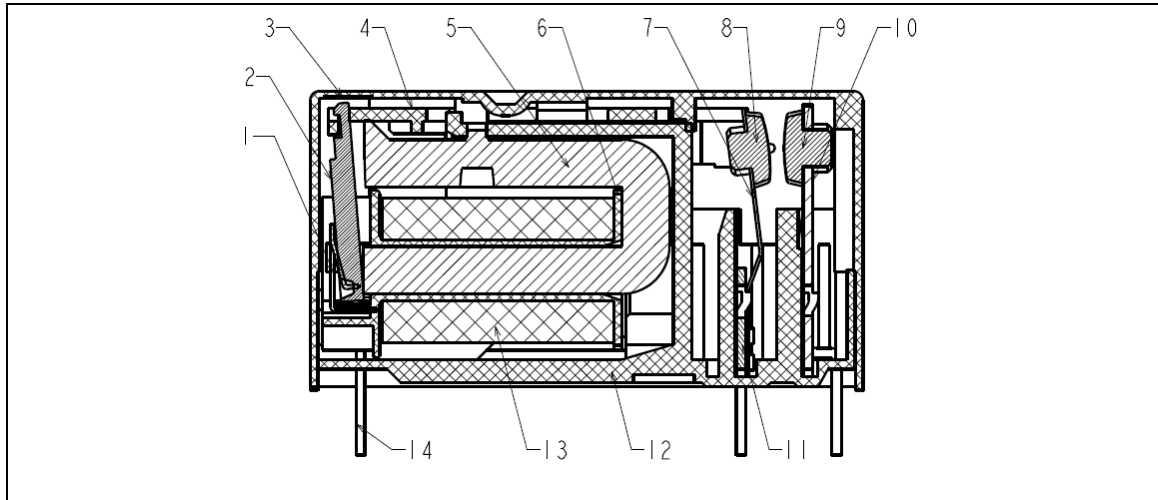


备注：外形图中产品部分未注公差尺寸，当尺寸≤1mm，公差为±0.2mm；
当尺寸在1~5mm，公差为±0.3mm；当尺寸>5mm，公差为±0.4mm。

Note:

The tolerance dimension of the product parts in outline drawing is ≤ 1 mm, tolerance is ±0.2 mm;

When the dimension is 1 ~ 5 mm, the tolerance is ±0.3 mm; When size > 5 mm, tolerance is ± 0.4 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	压簧	Hinge	8	动点	Moveable Contact
2	衔铁	Armature	9	静点	Stationary Contact
3	外壳	Case	10	常开静簧脚	NO Stationary Terminal
4	推杆	Card	11	动簧脚	Mobile Terminal
5	铁芯(U型)	Core (U type)	12	底座	Base
6	线圈架	Bobbin	13	漆包线	Insulation wire
7	动簧片	Moving spring	14	引线针	Coil-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	压簧 Hinge	铜合金 Copper alloy	鑫科/三菱/兴业/博威 (Xin Branch / Mitsubishi / Industrial / Broadway)
2	衔铁 Armature	电工纯铁 Electrician pure iron	太钢/鞍钢/宝钢 (TISCO/ANSTEEL/BAOSTEEL)
3	外壳 Case	工程塑料 Plastic	宝理/新光/杜邦/三菱/南通 (Polyplastics / Shin Kong / DuPont / Mitsubishi / Nantong)
4	推杆 Card	工程塑料 Plastic	宝理/杜邦/飞利浦/住友 (Polyplastics / DuPont / Philips / Sumitomo)
5	铁芯 (U型) Core (U type)	电工纯铁 Electrician pure iron	太钢/鞍钢/宝钢 (TISCO/ANSTEEL/BAOSTEEL)

6	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)
7	动簧片 Mobile Terminal	铜合金 Copper alloy	鑫科/三菱/兴业/博威 (Xin Branch / Mitsubishi / Industrial / Broadway)
8	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)
9	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)
10	常开静脚 NO Stationary Terminal	铜合金 Copper alloy	鑫科/三菱/兴业/博威 (Xin Branch / Mitsubishi / Industrial / Broadway)
11	动簧脚 Mobile Terminal	铜合金 Copper alloy	鑫科/三菱/兴业/博威 (Xin Branch / Mitsubishi / Industrial / Broadway)
12	基座 Base	工程塑料 Plastic	宝理/新光/杜邦/三菱/南通 (Polyplastics / Shin Kong / DuPont / Mitsubishi / Nantong)
13	漆包线 Insulation wire	3UEW	蓉胜/一致/益利素勒/富士 (Ronsen/Yichi/ Elektrisola/FUJI)
14	引线针 Coil-Terminal	铜包钢 Copper clad steel	跃兴/宏福 (Yuexing /Hongfu)

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