



**标准&定制开关连接器产品制造商**  
DONG GUAN XI BANG ELECTRONICS CO., LTD.

# 规格书

## SPECIFICATION

CUSTOMER NAME 客户名称: \_\_\_\_\_  
 CUSTOMER NO. 客户编号: \_\_\_\_\_  
 SERIES 系列: 检测开关  
 MODEL NO. 型号: XB-TM-7505M  
 DRAWING NO. 图形号: Detection Switch

If specification of this product meets your request, please confirm all the items of it and return to us with signature and stamp, it will be basis of our production and record. Thanks your cooperation in advance!

若此产品规格符合贵司要求，敬请确认此规格书内所有项目  
 并签名和盖章后回传给我司，以作我司产品制作之  
 依据和存档之用，多谢合作！

### EXAMINE & APPROVAL 审批

APPROVE 接受	NOT APPROVE 不接受
SIGNATURE 签署      STAMP 盖章      DATE 日期	

PREPARED BY. 制表人	CHECKED BY. 校对	APPROVED BY. 审核	APPROVAL BY. 批准
<div style="border: 1px solid red; padding: 2px;">研发部</div> <div style="border: 1px solid red; padding: 2px;">戴海明</div> <div style="border: 1px solid red; padding: 2px;">2022. 06. 08</div>	<div style="border: 1px solid red; padding: 2px;">品质部</div> <div style="border: 1px solid red; padding: 2px;">黄自清</div> <div style="border: 1px solid red; padding: 2px;">2022. 06. 08</div>	<div style="border: 1px solid red; padding: 2px;">工程部</div> <div style="border: 1px solid red; padding: 2px;">庞军</div> <div style="border: 1px solid red; padding: 2px;">2022. 06. 08</div>	<div style="border: 1px solid red; padding: 2px;">总经办</div> <div style="border: 1px solid red; padding: 2px;">吴量</div> <div style="border: 1px solid red; padding: 2px;">2022. 06. 08</div>

**东莞市溪榜电子有限公司**

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MAil: HK@ALPSR.CN    XB@ALPSR.CN    XB@ALPSR.COM  
 Quality core! Afterburner for Made in China!



# 东莞市溪榜电子有限公司

## DONG GUAN XI BANG ELECTRONICS CO., LTD

### APPROVAL SPECIFICATIONS

CUSTOMER	CUSTOMER'S P/N	GYE'S P/N	PRODUCT	REVISION
		XB-TM-7505M	DETECTOR SWITCH	A

#### 1、概述

##### GENERAL

#### 1.2 适用范围

##### APPLICATION

此规格书适用于检测开关的相关要求

This specification is applied to the requirements for DETECTOR SWITCH.

#### 1.3 工作温度范围

##### Operating Temperature Range

-20℃~70℃(在标准大气压、标准湿度条件下)

-20℃~70℃ (Normal humidity, normal air pressure)

#### 1.4 贮藏温度范围

##### Storage Temperature Range

-30℃~80℃(在标准大气压、标准湿度条件下)

-30℃~80℃ (Normal humidity, normal air pressure)

#### 1.5 测试条件

##### Test Conditions

在没有其它特定的条件下，应该在以下的条件下进行测试和测量：

Unless otherwise specified, tests and measurement shall be made in the following standard conditions:

常温.....5℃~35℃

Normal temperature.....5℃~35℃

标准湿度.....相对湿度 25%~85%

Normal humidity.....relative humidity 25%~85%

标准大气压.....86KPa~106Kpa

Normal air pressure.....86Kpa~106Kpa

在制造过程中，测试和测量应该在以下的条件下进行：

If any doubt arise from the judgment, tests shall be conducted at the following conditions:

温度.....20℃±2℃

Temperature.....20℃±2℃

相对湿度.....65%±5%

Relative humidity.....65%±5%

环境气压.....86KPa~106Kpa

Air pressure.....86KPa~106Kpa

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**2、 详细说明**

Detailed specification

2.1 外观：应无影响、降低产品性能的缺陷；

Appearance: There should be no defects that affect the serviceability of product.

2.2 结构尺寸和安装尺寸：应符合装配图要求；

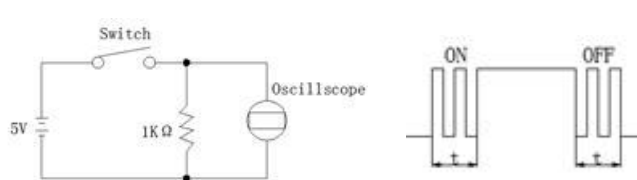
Style and dimension: shall conform to the assemble drawings.

2.4 工作额定值：DC 5V, 0.1~5 mA

Ratings: DC 5V, 0.1~5 mA

**3. 电气性能：**

**ELECTRICAL SPECIFICATION**

项 目	ITEM	试 验 条 件	要 求
		TEST CONDITIONS	REQUIREMENTS
1	接触电阻 Contact Resistance	在以 5V 10mA 的直流电源或不低于 1KHz 的交流电源的电路中测量 Measurements shall be made by 5V DC 10mA or more than 1KHz AC small-current contact resistance meter.	$\leq 300m\Omega$
2	绝缘电阻 Insulation Resistance	在端子之间施加 DC 250V /1min 的条件下, 测量端子之间底座、盖板的电阻值 Measurement shall be made following application of 100V DC potential, across terminals, and across terminals and cover, for one minute.	$\geq 100M\Omega$
3	介质耐压 Dielectric voltage proof	在端子之间施加 100V AC(50Hz 或 60Hz)/1min 100V AC (50Hz or 60Hz) shall be applied across terminals, for one minute.	无击穿、无飞弧 There should be no breakdown and flashover
4	触点抖动 Bounce	按照正常使用时的力度轻按手柄中心（每秒 3~4 次），在导通和断开过程中测试开关抖动 Lightly striking the center of the stem at a rate encountered in normal use (3 to 4 times per second), and bounce shall be tested at "ON" and "OFF" 	ON - 10 msec.max OFF- 10 msec.max



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项目 ITEM	试验条件 TEST CONDITIONS		要求 REQUIREMENTS	

### 4. 机械性能: MECHANICAL SPECIFICATION

1	操作力 Operating Force	操作位置 (OP) 见图纸 Operating position(OP) saw as the drawing	0.25±0.15 N						
2	端子强度 Terminal Strength	静载荷为 4.9 N 在任何方向施加到端子上 60 秒。每个端子一个周期。 A static load of 4.9N shall be applied to the tip of the terminals for 60 seconds in any direction. 1cycle shall be made per 1 terminal.	电气性能满足要求，端子无松动 Electrical performance shall be satisfied, without damage of excessive looseness of terminals						
3	停止强度 Stop Strength	开关垂直于操作方向放置，从操作方向向驱动件施加 30N 的静负荷持续 1min。 Placing the switch such that the direction of switch operation is vertical, and then a static load of 30N shall be applied in the direction of stem operation for a period of 1 min.	无机械和电气损坏 There shall be no sign of damage mechanically and electrically.						
4	可焊性 Solderability	在以下设定条件下进行测量: Measurements shall be made following the test set forth below: (1) 焊接温度:245±5℃ Solder temperature : 245±5℃ (2) 浸入时间:2s±0.5s Immersion time: 2s±0.5s 对于其它步骤参考《GB 5095.6—86》试验 12a The other steps please refer to 《GB 5095.6-86》TEST 12a	除边缘外涂层应均匀覆盖 75%以上 Except for the edge, the coating should cover a minimum 75%						
5	Soldering Heat Resistance 耐热焊接	The test is conducted under the following condition. 在下列条件下进行测试。 <table border="1" style="margin-left: 20px;"> <thead> <tr> <th></th> <th>Temperature(°C)</th> <th>Time (sec)</th> </tr> </thead> <tbody> <tr> <td>Manual Soldering</td> <td>350±10</td> <td>3</td> </tr> </tbody> </table>		Temperature(°C)	Time (sec)	Manual Soldering	350±10	3	Shall be free from a remarkable change in Appearance. 外观有明显的变化 The electrical performance requirement specified in item 3 shall be met. 电气性能需求指定的3项得到满足。
	Temperature(°C)	Time (sec)							
Manual Soldering	350±10	3							



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项目 ITEM	试验条件 TEST CONDITIONS			要求 REQUIREMENTS												
<b>5、极限电气性能： ENVIRONMENTAL SPECIFICATION</b>																
1	低温测试 Resistance to low temperature	样品应按照以下实验条件进行测试，实验后样品应放在常温及标准湿度的环境中 1 小时后做性能测试： Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 h before measurements are made: (1) 温度：-30±2℃      Temperature : -30±2℃ (2) 时间：48h              Time: 48h		接触电阻：≤300mΩ Contact resistance: ≤300mΩ 项目 3,4.1 Item 3,4.1												
2	高温测试 Heat resistance	样品应按照以下实验条件进行测试，实验后样品应放在常温及标准湿度的环境中 1 小时后做性能测试： Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 h before measurements are made: (1) 温度：80±2℃      Temperature:80±2℃ (2) 时间：48h              Time: 48h		接触电阻：≤300mΩ Contact resistance: ≤300mΩ 项目 3,4.1 Item 3,4.1												
3	温度周期性测试 Change of temperature	根据下面的测试要求进行 5 次循环的温度周期性测试，实验后样品应放在常温及标准湿度的环境中 1 小时后做性能测试。测试期间样品应保持干燥。 After 5 cycles of following conditions, the sample shall be allowed to stand under normal temperature and humidity conditions for 1 h. and measurements shall be made. During the test water drops shall be removed. <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Temperature</th> <th style="text-align: center;">Time</th> </tr> </thead> <tbody> <tr> <td rowspan="4" style="text-align: center; vertical-align: middle;">1cycle</td> <td style="text-align: center;">-30±3℃</td> <td style="text-align: center;">30m</td> </tr> <tr> <td style="text-align: center;">常温</td> <td style="text-align: center;">15m</td> </tr> <tr> <td style="text-align: center;">80±3℃</td> <td style="text-align: center;">30m</td> </tr> <tr> <td style="text-align: center;">常温</td> <td style="text-align: center;">15m</td> </tr> </tbody> </table>			Temperature	Time	1cycle	-30±3℃	30m	常温	15m	80±3℃	30m	常温	15m	接触电阻：≤300mΩ Contact resistance: ≤300mΩ 项目 3,4.1 Item 3,4.1
	Temperature	Time														
1cycle	-30±3℃	30m														
	常温	15m														
	80±3℃	30m														
	常温	15m														
4	湿温测试 Moisture resistance	样品应按照以下实验条件进行测试，实验后样品应放在常温及标准湿度的环境中 1 小时后做性能测试： Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 h before measurements are made: (1) 温度：60±2℃      Temperature: 60±2℃ (2) 相对湿度：90%~95%      Relative humidity:90% to 95% (3) 时间：96h              Time: 96h		接触电阻：≤300mΩ Contact resistance: ≤300mΩ 绝缘电阻：≥50MΩ Insulation resistance: ≥50MΩ 项目 3,4.1,4.2,4.3 Item 3,4.1,4.2,4.3												



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#### 6、极限机械性能：

#### ENDURANCE SPECIFICATION

项目 ITEM		试验条件 TEST CONDITIONS	要求 REQUIREMENTS
1	工作寿命 Operation life	根据下面的测试要求进行测试： Measurement shall be made following the test set forth below: (1) DC 5V, 5 mA 带负载 DC 5V, 5 mA resistive load (2) 操作动速率：30 次/分 Rate of operation: 30 times/min. (3) 寿命 Life : 100,000 次	接触电阻 $\leq 1000m\Omega$ Contact resistance $\leq 1000m\Omega$ 按力：初值的 $\pm 30\%$ Operating Force: initial value $\pm 30\%$ 项目 3,4.1 Item 3,4.1
2	振动 Vibration	根据以下给定条件进行测试： Measurement shall be made following the test set forth below: (1) 振动频率范围：10~55~10Hz Vibration frequency range: 10 to 55 to 10Hz (2) 振幅（峰—峰）：1.5mm Amplitude: 1.5mm (3) 振动方向：包括手柄行程方向在内的三个相互垂直的方向 Direction of vibration: Three mutually perpendicular direction including the direction of stem travel (4) 测试时间：每次 2hours . Duration: Each 2hours.	项目 3,4.1 Item 3,4.1
3	冲击 Shock	开关应在实验后测量 Switch shall be measured after following test. 1.安装方法：正常安装 Mounting method: Normal mounting method 2.加速 490 m/s <sup>2</sup> (50G)      Acceleration:490 m/s <sup>2</sup> (50 G) 3.持续时间：11 ms              Duration: 11 ms 4.测试方向：6 个方向          Test direction: 6 directions 5.冲击次数：每个方向 3 次（18 次计） Number of shocks: 3 times per direction ( 18 times in total)	项目 3,4.1 Item 3,4.1



7. 焊接条件:  
SOLDERING CONDITIONS:

## APPROVAL SPECIFICATIONS

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		XB-TM-7505M	DETECTOR SWITCH	A

项目 ITEM	推荐条件 Recommended conditions
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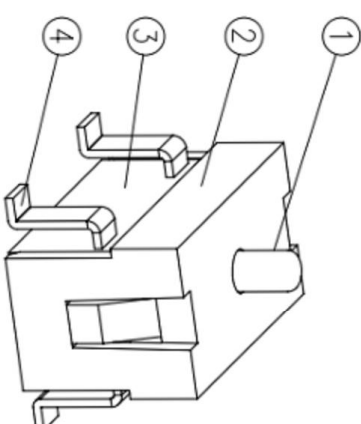
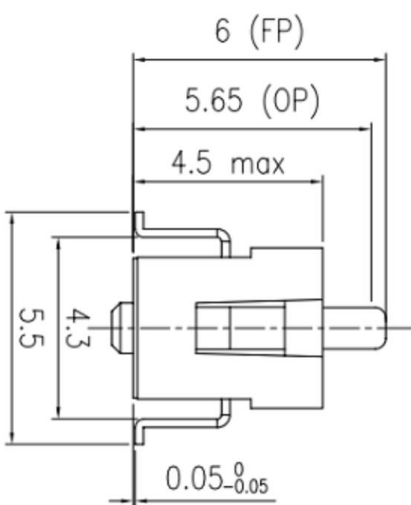
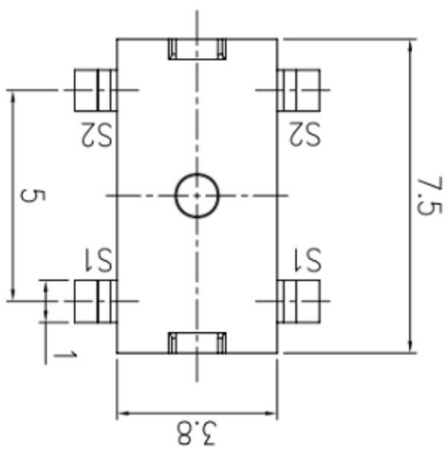
7.2	波峰焊 Wave Soldering	<p style="text-align: center;">&lt; Temperature profile &gt;</p> <p>Preheat ----- 100°C max, 45 (sec)            预热 : 100°C max, 45 (sec)            Peak temperature ----- 255°C max            峰值温度 : 255°C max            Soldering area temperature ----- 255°C max, 1 ~ 4 (sec)            焊接区温度 : 255°C max, 1 ~ 4 (sec)            Except for the edge, the coating should cover a minimum 90%</p>
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- 说明:**
- 1.1 开关浸焊后, 注意不要用溶剂清洗。  
After switches were soldered, please be careful not to clean switches with solvent.
  - 1.2 在使用烙铁的情况下, 焊锡温度应在 350°C 以下、3 秒以内。  
In the case of using soldering iron, soldering conditions shall be 350°C max and 3 sec.max.
  - 1.3 浸焊后, 注意不要在顶部施加负荷。  
Right after switches were soldered; please be careful not to load to on the knobs of switches.
- 2 设计中应注意的事项( Design instructions):**
- 2.1 印刷基板的安装孔尺寸参见产品图。  
Follow recommended P.W.B. piercing plan in outside drawing page.
- 3 注意点(Note):**
- 3.1 注意不要施加超负荷的压力或晃动开关  
Please be cautions not to give excessive static load or shock to switches.
  - 3.2 开关浸焊后, 印刷基板注意不要叠放。  
Please be careful not to pile up P.W.B. after switches were soldered
  - 3.3 保管时尤其应注意避开高湿高温和有腐蚀性气体的环境。如需要长时间保存, 请不要打开包装箱。  
Preservation under high temperature and high high humidity or corrosive gas should be avoided Especially . When you need to preserve for a long period ,do not open the carton .



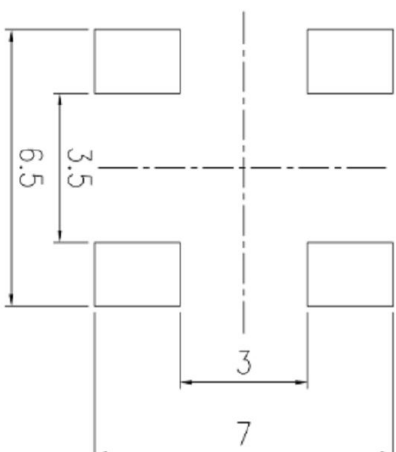
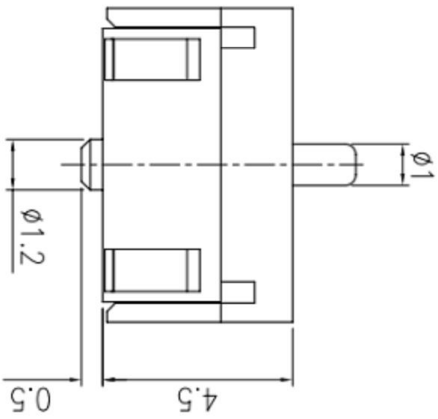
CAD FILE:

ROHS



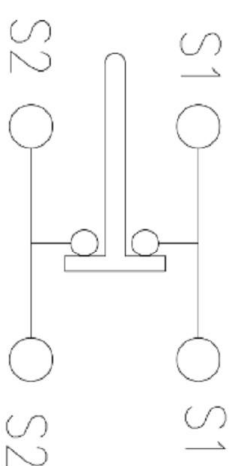
安装孔尺寸图

MOUNTING HOLE DIMENSIONS



电路图

SCHEMATIC



8											
7											
6											
5											
4	CONTACT	SUS	1	Ag CLAD							
3	CASE	PPA/BRASS STRIP	1	BLACK/Ag PLATED							
2	COVER	STEEL STRIP	1	Ni PLATED							
1	KNOB	PPA	1	BLACK							
NO.	PARTS	MATERIALS	Q'TY	FINISH							

TOLERANCE UNLESS SPECIFIED

WITHIN 1.5mm : ±0.1mm  
OVER 1.5mm : ±0.2mm

TITLE : Detection Switch

MODEL: XB-TM-7505M

UNIT : mm

SCALE: 5:1

DRWG NO.: XB-TM-7505M

DWN. JUN. YANG 2012-9-25

CHK'D DONG. PANG 2012-9-25

APPD. ZENQ. CHEN 2012-9-25



东莞市溪榜电子有限公司  
DONG GUAN XI BANG ELECTRONI CS CO., LTD.

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