



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-VS-040
DRAWING NO.	图 形 号:	Detector Switches

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
研发部 戴海明 2022. 06. 08	品质部 黄自清 2022. 06. 08	工程部 庞军 2022. 06. 08	总经办 吴量 2022. 06. 08

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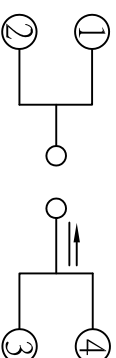
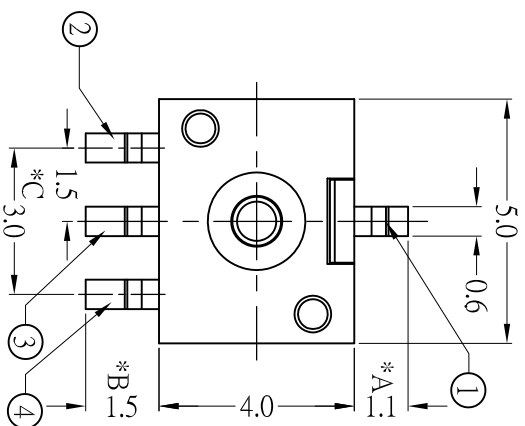
Dong guan Xi Bang Electronics Co., Ltd
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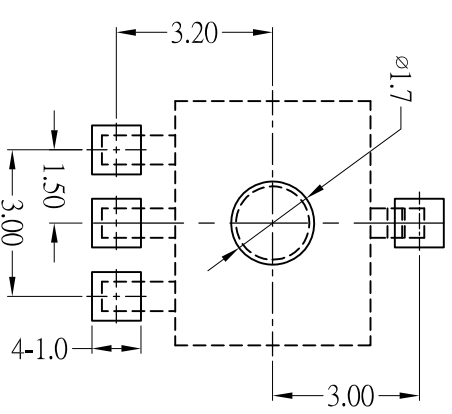
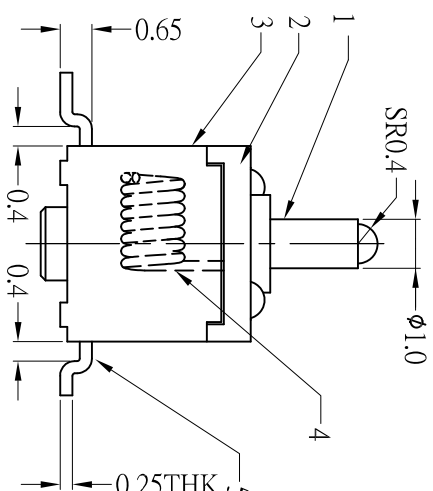
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Dong Guan XB ElectronicsCo., Ltd

AccountNumber: 705540238
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required)
MAIL: HK@ALPSR.CN XB@ALPSR.CN
Quality core! Afterburner for Made in China!

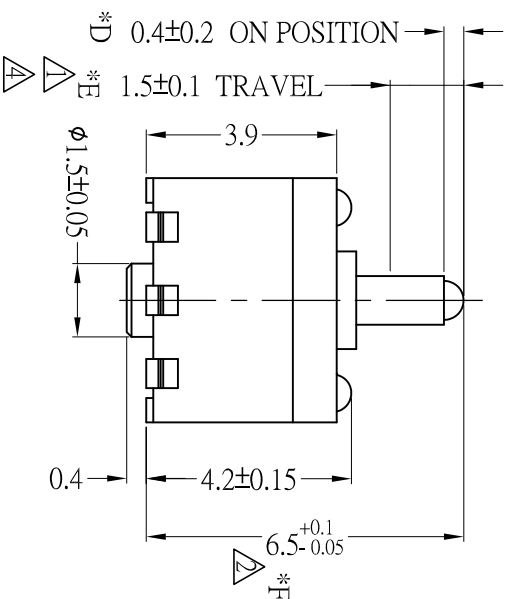
REVISION		
POSITION	DESCRIPTION	DATE
①	Size 1.7 ^{+0.2} _{-0.1} , 6.5 change to 1.7 $\pm$ 0.15, 6.5 $\pm$ 0.15	2014.10.24
②	Material change and tolerance change	2014.11.12
③	Finishing change	2015.01.14
④	Size 1.7 $\pm$ 0.15 change to 1.5 $\pm$ 0.1	2015.06.12
⑤	Add MATERIAL PART	2019.04.11



SCHEMATIC

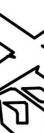
P.C.B LAYOUT

* CRITICAL DIMENSION



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DONG GUAN XI BANG ELECTRONI CS CO., LTD.

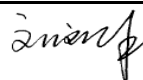


 东莞市溪榜电子有限公司 DONG GUAN XI BANG ELECTRONI CS CO., LTD.		 		7				
SERIES : MICRO SWITCH PART NAME : TR-004		DRAWING NO. GENERAL TOLERANCE	CF-ENL-MS9006	6				
				5	TERMINAL	BRASS	4	Ag PLATED
				4	SPRING	SUS Δ	1	Ag PLATED Δ
				3	CASE	☐ PA66 ☒ PA6T Δ Δ	1	BLACK
UNIT : MM		DWN.		2	COVER	☐ PA66 ☒ PA6T Δ Δ	1	BLACK
SCALE : 5:1		CHK'D		1	KNOB	☐ PA66 ☒ PA6T Δ Δ	1	BLACK
REV : A/5		APPD.		NO. PART NAME		MATERIAL	QTY	FINISHING



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DONG GUAN XI BANG ELECTRONICS CO., LTD.

SPECIFICATION 规格书		DOCUMENT NO 文件编号	CF-SPEC-MS075
		EDITION 版本	A/0
		DATE 日期	2019.04.11
WRITTEN 编制	林伟珍	APP'D 审批	
SERIES 系列	MICRO SWITCH	MODEL NO 型号	XB-TM-VS-040

1. General 一般事项

1.1 Operating Temperature Range $-25^{\circ}\text{C} \sim +70^{\circ}\text{C}$ (normal humidity normal press.)

使用温度范围: $-25^{\circ}\text{C} \sim +70^{\circ}\text{C}$ (常湿常压条件下)

1.2 Storage Temperature Range $-30^{\circ}\text{C} \sim +80^{\circ}\text{C}$ (normal humidity normal press.)

存放温度范围: $-30^{\circ}\text{C} \sim +80^{\circ}\text{C}$ (常湿常压条件下)

1.3 Test conditions: The standard test conditions shall be $5 \sim 35^{\circ}\text{C}$ in temperature $45 \sim 85\% \text{ RH}$ and $860 \sim 1060 \text{ mbar}$ in atmospheric pressure. Should any doubt arise in judgement, tests shall be conducted at $20 \pm 2^{\circ}\text{C}$, $65 \pm 5\% \text{ RH}$. and $860 \sim 1060 \text{ mbar}$.

试验状态: 若无特别规定限制, 则以温度 $5 \sim 35^{\circ}\text{C}$, 相对湿度 $45 \sim 85\%$, 气压 $860 \sim 1060 \text{ mbar}$ 之标准状态测之。但对此标准状态之测定值发生判定疑问或有特别要求则以基准状态(温度 $20 \pm 2^{\circ}\text{C}$, 相对湿度 $65 \pm 5\%$, 气压 $860 \sim 1060 \text{ mbar}$)为准测定。

2. Appearance, construction and dimensions. 外观. 构造. 尺寸

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

外观: 不得有影响制品机能之缺陷。

2.2 Construction dimensions: Shall conform to the assembly drawings.

构造及尺寸: 必须与组立图符合。

3. Type of actuation: Tactile feedback

动作型式: 有触感之回馈

4. Contact arrangement: 1 poles 1 throws (Details of contact arrangement are given in the assembly drawings.)

接点构成: 单极单投式(详细如组立图所示)

5. Maximum ratings: 最大额定: DC 30 V 0.1A



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6. Electrical Characteristics 电气性能规格:

ITEM 项目		TEST CONDITIONS 测试条件	CRITERIA 判定基准
6.1	Contact resistance 接触电阻	Applying a static load twice the actuating force to the center of the metal contact measurements shall be made with a 1 kHz small-current contact resistance meter. 将两倍于动作力之静负荷加于金属弹片之中央以1 kHz小电流接触阻抗计测定之.	1 Ω Max. 1欧 以下
6.2	Insulation resistance 绝缘电阻	Measurements shall be made following application of DC 100V potential across terminals and across Terminals and frame for one minute . 以 DC 100V 之电压加于端子相互间及端子与外框间1 分钟测	100 MΩ min. 100 兆欧 以上
6.3	Dielectric with standing voltage 耐电压	AC 250V (50~60Hz) shall be applied across terminals and across terminals and frame for one minute. 以 AC 250V (50~60Hz) 之电压加于端子相互间及端子与外框间1 分钟测定之	There shall be no breakdown. 不可有绝缘破坏之现象

7. Mechanical performance 机械性能

ITEM 项目		TEST CONDITIONS 测试条件	CRITERIA 判定基准
7.1	Actuating force 动作力	Placing the switch such that the direction of switch operation is vertical and then gradually increasing the load applied to the center of the metal contact the maximum load required for the metal contact to come to a stop shall be measured. 将开关之操作部置于垂直方向,并在金属弹片之中央逐渐增加荷重,直到金属弹片不动为止,量取施力期间之最大荷重值	80gf±30gf
7.2	Travel行程	Placing the switch such that the direction of switch operations vertical and then applying a static load twice the actuating force to the center of the metal contact the travel distance for the metal contact to come to a stop shall be measured. 将开关之操作部置于垂直方向,并在金属弹片之中央加两倍于动作力之静负荷测量金属弹片被压到不动时之移动距离.	See drawings 见图纸
7.3	Stop strength 止动强度	Placing the switch such that the direction of switch operation is vertical a static load of 1 kgf shall be applied in the direction of stem operation for a period of 15 seconds. 固定开关,使开关与操作方向垂直,向按钮的操作方向加1Kgf的静负荷,时间为 15 秒。	There shall be no sign of damage mechanically and electrically. 不得有电气及机构上之破坏现象.



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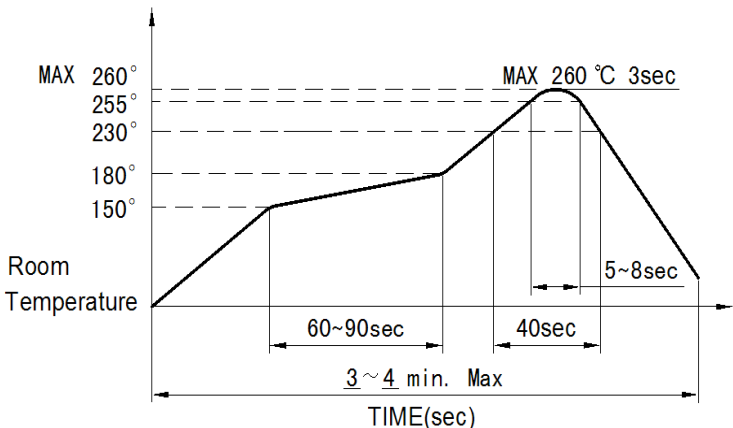
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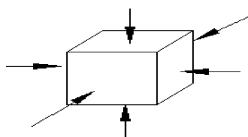
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ITEM 项目		TEST CONDITIONS 测试条件	CRITERIA 判定基准
7.4	Stem Strength 推柄强度	Placing the switch such that the direction of switch operation is vertical, the maximum force to withstand a pull applied opposite to the direction of stem operation shall be measured. (static load) 固定开关, 使开关与操作方向垂直, 测量推柄能承受相反方向拉力的最大值。(静负荷)	Max <u>1</u> k g f
8. Weather-proof 耐候性能			
ITEM 项目		TEST CONDITIONS 测试条件	CRITERIA 判定基准
8.1	Resistance to low temperatures 耐寒性能	Switch for testing being kept in the conditions at $-30 \pm 3^{\circ}\text{C}$ in temperature for 96 hours, and in anormal ambient condition for one hour, then to be measured within one hour. Drops of water being taken away. $-30 \pm 3^{\circ}\text{C}$ 放置96 小时试验后, 置于常温常湿中1 小时, 除去水滴后, 在1 小时内测定之	Item 6.1 , 6.2 Item 7.1 , 7.2 同6.1 , 6.2项 同7.1 , 7.2项
8.2	Heat resistance 耐热性能	Switch for testing being kept in the conditions at $85 \pm 2^{\circ}\text{C}$ in temperature for 96 hours, and in a normal ambient condition for one hour, then to be measured within one hour. $85 \pm 2^{\circ}\text{C}$ 放置96小时试验后, 置于常温常湿中1 小时, 在1小时内测定之	Item 6.1 , 6.2 Item 7.1 , 7.2 同6.1 , 6.2项 同7.1 , 7.2项
8.3	Moisture Resistance 抗湿性	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for one hour before measurements are made: 以下的试验必须要先将样品放置于下列实验要求内, 然后将其放置于常温常湿的环境下1 小时后进行测试: (1) Temperature 温度: $40 \pm 2^{\circ}\text{C}$ (2)Relative humidity 相对湿度: 90 to 95% (3) Time 时间: 96 hours (4)Water drops shall be removed 必须将水滴排除.	Contact resistance: 5Ω max. Insulation resistance: 100 M ohm min. Item 7.1, 7.2 接触阻抗在 5Ω 以下, 绝缘阻抗在 $100 \text{ M} \Omega$ 以上 同7.1, 7.2 项
8.4	Temperature Cycling 循环温度	1.Following five cycles of the temperature cycling test set forth below the sample shall be left in normal temperature and humidity conditions for one hour before measurements are made: 以下五个步骤的温度循环测试必须要先将样品放置于下列实验要求内, 然后将其放置在常温常湿的的环境下1 小时后进行测试: 2.During this test, water drops shall be removed. 试验过程中, 必须将水滴排除。 Per cycle 每一个循环 $-25^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 60 min, $+20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 30 min, $+70^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 60 min, $+20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 30 min	Item 6.1 , 6.2 Item 7.1 , 7.2 同6.1 , 6.2项 同7.1 , 7.2项



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ITEM 项目	TEST CONDITIONS 测试条件		CRITERIA 判定基准
8.5	Solderability test 可焊性试验	1. The top of the terminals shall be dipped 2mm in the solder bath of $230 \pm 5^{\circ}\text{C}$ for 3 ± 0.5 seconds. 端子顶部被浸入焊锡池中2mm深, 温度为 $230 \pm 5^{\circ}\text{C}$, 时间为 3 ± 0.5 秒. 2. Manual Soldering: 350Max Time $3 \pm 1\text{S}$ 手工焊锡温度: 350Max 时间 3 ± 1 秒.	More than 90% of the dipped part shall recovered by solder. 浸泡部份须附着90%以上.
8.6	Resistance to soldering heat test 耐焊性试验	1. Reflow temperature is kept at $260 \pm 5^{\circ}\text{C}$, then the product that is good for PCB board is put into the equipment to test; 回流温度保持在 $260 \pm 5^{\circ}\text{C}$, 然后将适合PCB板的产品放入设备进行测试. 2. Keep a device standard speed to running; 保持设备按标准速度运行; 3. Temperature profile: 温度示意图. 	1. Without deformation of case or excessive looseness of terminals electrical characteristics shall be satisfied. 本体无变形, 能满足于机械, 电气性能. 2. Allowable frequency of soldering process 1 Cycles. 容许焊锡次数1次
9. Endurance 耐久性能			
ITEM 项目	TEST CONDITIONS 测试条件		CRITERIA 判定基准
9.1	Life Test 寿命测试	1. Standard travel (0.6mm) load to cycles operation: 50,000 cycles at a speed of 20 to 30 cycles/min. 标准导通行程0.6mm条件下, 每分钟以20~30次的速度进行50,000次测试. 2. Extreme limit of travel (1.5mm) load to cycles operation: 20,000 cycles at a speed of 20 to 30 cycles/min. 极限行程1.5mm条件下, 每分钟以20~30次的速度进行20,000次测试.	Contact resistance 接触电阻: 5Ω Max. Actuating force 动作力: + 30 % or - 30 % of initial force 初始值的 $\pm 30\%$ Item 6.2, 7.2 同 6.2, 7.2项

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SERIES 系列	MICRO SWITCH	MODEL NO 型号	XB-TM-VS-040
ITEM 项目	TEST CONDITIONS 测试条件		CRITERIA 判定基准
9.2	Vibration resistance 耐振动性	Measurements shall be made following the set forth below: 依下列设定方式测试: (1).Range of oscillation : 10 to 55 Hz 振动数范围: 10~55 Hz (2).Amplitude pk-to-pk : 1.5 mm 全振幅:1.5 mm (3).Cycle of sweep : 10-55-10 Hz in one minute approx. 扫瞄周期:10-55-10 Hz 约1 分钟 (4).Mode of sweep:Logarithmic sweep or uniform sweep. 扫瞄振动之变化方式:近似对数或直线 (5).Direction of oscillation: Three mutually perpendicular directions. 振幅方向:相互垂直之三个方向(含柄移动之方向) (6).Duration of testing : 2 hours each for a total of 6 hours. 试验时间:各2 小时(计6 小时)	Item 6.1 , 6.2 Item 7.1 , 7.2 同6.1 , 6.2项 同7.1 , 7.2项
9.3	Impact shock resistance 耐冲击性	Shall be made following the test set below: (1).Operation :vertical drop at 1 meter. (2).Test: select 6 surfaces, 3 cycles per direction . 如下设定方法操作: (1). 操作方式: 从1米高位置, 自由垂直跌落; (2). 测试方法: 如下图选择6个面, 每方向跌落3次. 	Item 6.1 , 6.2 Item 7.1 , 7.2 同6.1 , 6.2项 同7.1 , 7.2项