



1:SPECIFICATION

- 1、Rating: DC 30V 0.1A
- 2、Contact resistance: $\leq 100\text{m}\Omega$
- 3、Insulation resistance: $\geq 100\text{M}\Omega$ DC500V
- 4、Withstand voltage: AC 300V(30Hz)/min
- 5、Insertion and extraction force: $180\text{gf} \pm 30\text{gf}$
- 6、life test: 5000 cycles

2:Did not note the size busstrip:

- 1.0-10.0mm \pm 0.10mm
- 10.0-20.0mm \pm 0.20mm
- 20.0-50.0mm \pm 0.25mm

备注：该产品只能手工焊接。



深圳市韩下电子有限公司

签 字		批 准	罗小春
绘 图	黄彬	审 核	张伟
比 例	1:1	日 期	2022. 1. 11

名称及材料	锁定功能	闭合锁定	
	手柄/按钮	盖 板	POM
	针 脚	基 座	PC
	钩 针	基 座	PA66
	弹 簧	针 脚	H62(镀银)
	接 触 夹	钩 针	精密钢丝
		弹 簧	碳 素 钢
电 路 图		接 触 夹	覆合银铜皮
	<p>PUSH OFF: 1-2, 4-5 通 PUSH ON : 2-3, 5-6 通</p>		
印刷板开孔尺寸			
货号			
名称	HX 7-7 ZS		
图号			
页码	总页数		



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承 认 书

SPECIFICATION FOR APPROVAL

客 户 Customer:

产品名称 Project:

自锁开关

规格型号 Part No:

HX 7-7 ZS

贵公司承认印 Approval signatures

料 号/Part No.	签 章/Signatures

日期 Date:

拟制/Drawn	黄彬	
审核/Check	张伟	
批准/Approved	罗小春	



1. 一般特性 General Characteristics

- 1.1 额定值(Rating Value): DC30V/0.1A
- 1.2 工作温度(Work Temperature Range): $-10^{\circ}\text{C} \sim 70^{\circ}\text{C}$
- 1.3 贮存温度(Store Temperature Range): $-20^{\circ}\text{C} \sim 80^{\circ}\text{C}$
- 1.4 正常测试条件(未有特殊说明量测在以下条件进行):

General test condition (Tests and measurements shall be made under the following standard conditions unless otherwise specified):

正常温度: $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$ 相对湿度: 45%~85% RH 气压: 8,600~10,600 帕
Temperature: $5^{\circ}\text{C} \sim 35^{\circ}\text{C}$ Relative humidity: 45%~85% Air pressure: 8,600~10,600 pa

2. 产品外观及尺寸要求 Appearance & Dimension Requirement

- 2.1 产品外形结构紧凑, 无配合不良.
The structure of product is compact, and assembly of parts has no badness.
- 2.2 产品塑胶部件无严重缩水、披锋、欠注、斑点、破损或变形现象.
The plastic parts of product have no serious defects such as very serious shrink, scarcity, fleck, disrepair, transmutation, etc.
- 2.3 产品引脚和外壳无严重氧化、脏污、变形、毛刺或电镀不良.
Lead feet and shell have no serious defects such as oxidation, smudge, disrepair, burr, defects on plating.
- 2.4 开关操作顺畅, 节奏感强, 无明显卡塞现象.
Operating switch is unhindered, rhythmized, and there is not palpable clag.
- 2.5 产品结构及尺寸参见产品规格图纸.
Construction and dimensions: Refer to individual product drawing.

3. 电气特性 Electronic Characteristics

No.	项 目 Item	测试方法 Test Method	测试设备 Equipment	特性要求 Requirements
3.1	接触电阻 Contact Resistance	在低电流 ($\leq 100\text{mA}$) 条件下测试. Measured at low current (100mA or less).	低电阻测试仪 Low Resistance Meter	$100\text{m}\Omega \text{ max}$
3.2	绝缘阻抗 Insulation Resistance	测试相邻引脚之间, 引脚与外壳之间的绝缘阻抗(DC 500V). Measurement shall be made between adjacent terminals, between terminal and shell(DC 500V).	绝缘测试机 Insulation Resistance Tester	$100\text{M}\Omega \text{ min}$
3.3	耐压测试 Dielectric Withstand Voltage	输入一定电压(30Hz, 电压值 AC 300V) 1 分钟, 漏电流为 2mA, 测试邻近端子间. Apply certain voltage (30Hz, AC 300V) for 1 minute between adjacent contacts of the connector with 2mA leakage sensitivity.	耐压测试机 Puncture Tester	没有绝缘破坏. 电弧等异常. No arcing, break down and damaging insulation.



4. 机械特性 Mechanical Characteristics

No.	项 目 Item	测试方法 Test Method	测试设备 Equipment	特性要求 Requirements
4.1	操 作 力 Operation Force	逐渐施力操作开关按键，测量开关到达全部工作行程时所需的最大操作力度。 Operate the keystroke of the switch and then increase press strength gradually, Measured maximum operation force while the travel of the switch is full.	测力计 Force Gauge	$180\text{gf} \pm 30\text{gf}$
4.2	行 程 Full travel	垂直操作开关按键，量测开关顶端最大移动距离。 Operate the keystroke of the switch vertically, the travel distance of keystroke moving from its free position to maximum moving distance shall be measurement.	游标卡尺 Vernier Caliper	$2.25 \pm 0.15\text{mm}$

5. 可靠性测试 Reliability trial

No.	项 目 Item	测试方法 Test Method	测试设备 Equipment	特性要求 Requirements
5.1	可焊性试验 Solder ability Test	端子顶部被浸入焊锡炉中，温度为 $230 \pm 5^\circ\text{C}$ ，时间 5 ± 1 秒。 The top of the terminals shall be dipped in the solder bath at $230 \pm 5^\circ\text{C}$ for 5 ± 1 seconds.	控温锡炉 Solder Stove	引脚至少 95% 上锡。 Ninety-five percent of terminals shall be dipped.
5.2	寿命试验 Operation Life	开关在寿命试验设备上以约 90 次 / 分的速度连续被操作，具体次数见规格图示。 Switch shall be operated continuously at about 90 cycles /min without load.	寿命试验机 Life Tester	寿命：5000 次 实验后： 绝缘电阻： $10\text{M}\Omega$ Min 操作力：变化在 $\pm 50\%$ 内 开关外观及结构无损坏。 Life test: 5000 cycles After test: Insulation resistance: $10\text{M}\Omega$ Min Operating force: Change should be within $\pm 50\%$ of specified value. No abnormalities shall be recognized in appearance and construction.

5. 可靠性测试 Reliability trial

No.	项 目 Item	测试方法 Test Method	测试设备 Equipment	特性要求 Requirements
5.3	耐焊接热 Resistance to Soldering heat	手焊接的时候温度需控制在 $330 \pm 5^{\circ}\text{C}$ ，时间为 3 ± 0.5 秒，但不能在端子施加异常压力。 SOLDERING IRON METHOD: BIT TEMPERATURE $330 \pm 5^{\circ}\text{C}$ APPLICATION TIME OF SOLDERING IRON 3 ± 0.5 SEC HOWEVER EXCESSIVE PRESSURE SHALL NOT BE APPLIED TO THE TERMINAL	防静电烙铁 Anti-static soldering iron	本体无变形，能满足于机械、电气性能。 Appearance should be not damaged, electrical and mechanical characteristics shall be satisfied.
5.4	耐高温测试 Resistance to Heat Test	放置在温度 $80 \pm 2^{\circ}\text{C}$ 环境中 96 小时后，再置于正常条件下 1 小时后测定。 The switch shall be stored at a temperature of $80 \pm 2^{\circ}\text{C}$ for 96 hours, Measurements shall be made after it be subjected to the standard conditions for 1 hour.	高低温试验机 High & Low Temperature Tester	外观，机械及电气性能均符合要求。 Appearance, electrical and mechanical characteristics shall be satisfied.
5.5	耐低温测试 Resistance to Cold Test	放置在温度 $-25 \pm 2^{\circ}\text{C}$ 环境中 96 小时后，再置于正常条件下 1 小时后测定。 The switch shall be stored at a temperature of $-25 \pm 2^{\circ}\text{C}$ for 96 hours, Measurements shall be made after it be subjected to the standard conditions for 1 hour.	高低温试验机 High & Low Temperature Tester	外观，机械及电气性能均符合要求。 Appearance, electrical and mechanical characteristics shall be satisfied.
5.6	耐湿性测试 Resistance to Humidity Test	放置于温度 $40 \pm 2^{\circ}\text{C}$ ，相对湿度为 90~96% 环境中 96 小时后，再置于正常条件下 1 小时后测定(注意要擦去水滴)。 The switch shall be stored at a temperature of $40 \pm 2^{\circ}\text{C}$, relative humidity 90~96% for 96 hours, Measurements shall be made after it be subjected to the standard conditions for 1 hour (Wipe out water drip).	恒温恒湿箱 Temperature & Humidity Tester Chamber	外观，机械及电气性能均符合要求。 Appearance, electrical and mechanical characteristics shall be satisfied.
5.7	盐雾实验 Salt Mist Test	试件在下述实验后测量： 1. 温度： $35 \pm 5^{\circ}\text{C}$ 2. 盐溶液浓度： $5 \pm 1\%$ (质量百分比)， 3. 试验时间： 24 小时， 4. 试验后，将盐沉积物用水冲掉。 The switch shall be checked after following test: 1. Temperature: $35 \pm 5^{\circ}\text{C}$ 2. Salt solution: $5 \pm 1\%$ (Solids by mass) 3. Duration: 24 hours, 4. After immersing, salt deposit shall be removed by running water.	盐雾试验机 Salt Spray Tester	在金属件上没有严重腐蚀斑点。 No remarkable corrosion shall be recognized in metal parts.