Data Sheet

产品型号 Model: KW4-3Z-3-B122023L3　　说明 Description:微动开关 Micro Switch　　版本 Version A

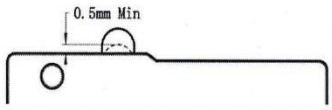
1. 一般特性 General Characteristics:

1.1 适用范围 Application	该规格书指微动开关的一般使用范围 This specification is applied to the micro switch for general applications.
1.2 使用温度范围 Operating Temperature Range	0° C 到 +120° C 0° C to +120° C
1.3 使用相对湿度范围 Operating Relative Humidity Range	≦96% RH, +40° C
1.4 实验条件 Test Conditions	若没有特别说明，则试验大气条件如下： Unless otherwise specified, the atmospheic conditions for making measurements and tests are as follows: 环境温度Ambient Temperature: 5-35° C 大气压力Air Pressure: 86-106 Kpa 860-1060 mbar 相对湿度Relative Humidity: 45-85% RH

2. 外观，结构及尺寸 Appearance, Structure and Dimensions:

2.1 外观Appearance	产品外观良好，无锈蚀、裂纹和镀层缺陷。 The switch shall have good finishing, and no rust, crack or plating defects.
2.2 结构及尺寸 Structure and Dimensions	参见产品图纸 Refer to individual product drawing
2.3 标识Markings	参见产品图纸。 Refer to individual product drawing.

3. 使用条件 Using Conditions:

	项目Item	标准Criteria	实验方法Test Method
3.1	开关使用注意事项 Notice for the use of the switch		正常使用时，当按钮压下时其露出开关底壳的高度要保证至少为0.5mm。 The height of the button is out of the Housing of the switch is 0.5mm Min. When actuating the button.

4. 电气性能 Electrical Characteristics:

	项目Item	标准Criteria	实验方法Test Method
4.1	接触电阻 Contact Resistance	50mΩ Max.	在动触点及静触点间的端子间加载1A，5VDC. 1A，5VDC is applied between each pair of terminals which reviting movable contact or stationary contact.
4.2	绝缘电阻 Insulation Resistance	100MΩ Min.	在相互绝缘的所有端子之间及各接线端子与外露的非载流金属零件之间加载500V 直流电，持续时间60 ± 5 秒。 500V DC voltage is applied between each pair of terminals, and between the terminal and the metal frame for 60 ± 5 Sec.
4.3	抗电强度 Dielectric Voltage	无击穿现象发生 No dielectric breakdown shall occur	在相互绝缘的所有接线端子之间加载500V(50-60Hz，泄漏电流0.5mA)交流电，各接线端子与外壳或非载流金属零件之间加载1500V(50-60Hz，泄漏电流0.5mA)交流电，持续时间60±5秒. 500V(50-60HZ, 0.5mA)alternate current load is applied between open terminals connected with wires; or 1500V(50-60HZ,0.5mA)alternate current load is applied between frame and terminal or between metal parts, for 60 ± 5 Sec.

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5. 机械性能 Mechanical Characteristics:

	项目Item	标准Criteria	实验方法Test Method
5.1	操作力（OF） Operating Force	4.5N Max	在按钮末端沿操作方向均匀施加静载荷，使按钮转换到动作位置 A static load shall be applied to the tip of button in operating direction to change the component to operating position
5.2	释放力 Releasing Force	0.15N Min.	在操作元件末端沿操作方向均匀减少静载荷，使操作元件从动作位置转换到释放位置。 A static load shall be reduced to the tip of actuator in operating direction to change component from operating position to release position.
5.3	操作位置 Operating Position	14.4±1mm.	开关发生转换时，操作元件末端到开关安装孔中心的距离 The distance from the end of operating component to the center of mount hole when switch is being transformed
5.4	预行程 Travels	0.6±0.2mm	按钮的最高点从自由位置到动作位置的距离。 The distance or angle through which the highest point of the button moves from the free position to the operating position.
5.5	差动行程 Differential Travel	0.4mm Max	按钮的最高点从动作位置到释放位置的距离。 The distance or angle of the highest point of the button from the operating position to the releasing position.
5.6	接线端强度 Terminal Strength	端子无松动，损坏及绝缘层的破裂，测量一次，电气性能应符合第4.1-4.2部分的要求。 Shall be free from terminal looseness, damage and insulator breakage. The electrical performance requirements specified in Section 4.1-4.2 shall be satisfied.	以2550gf/25N 作用力沿轴向逐渐施加于接线端末端，作用力方向为离开开关向外指向，保持60秒，每个接线端子 A static load of 2550gf/25N shall be applied to the tip of terminal in a desired direction for 60 Sec. The test shall be done once per terminal.

6. 寿命试验Durability Characteristics:

	项目Item	标准Criteria	实验方法Test Method
6.1	机械寿命 Operating Life without Load	实验后 a)根据4.2项检查绝缘电阻，其数值为最小10MΩ。 b)根据4.3项检查抗电强度，其外观及结构应无损坏。 c)操作力变化范围:初期值±50% After test: a)Check Insulation resistance as per item 4.2 but Insulation resistance 10MΩ Min. b)Check Dielectric Voltage as per 75% item 4.3, The switch shall be free from abnormalities in appearance and construction. c) Operating force range:±50% initial value	在不带负荷的条件下，在寿命试验设备上连续转换100,000次，30-60次/分钟。 100,000 cycles of operation shall be performed continuously at a rate of 30-60 cycles per minute without load.
6.2	电气寿命 Operating Life with Load		在产品图纸标示负荷件下，在CQC(GB15092.1)/IEC(EN61058-1)寿命试验设备上连续转换50,000次，15次/分。 50,000cycles of being operated shall be performed. continuously at a rate of 15cycles per minute with load of CQC(GB15092.1)/IEC (EN61058-1) as follow:Refer to individual product drawing(Resistive Load)。

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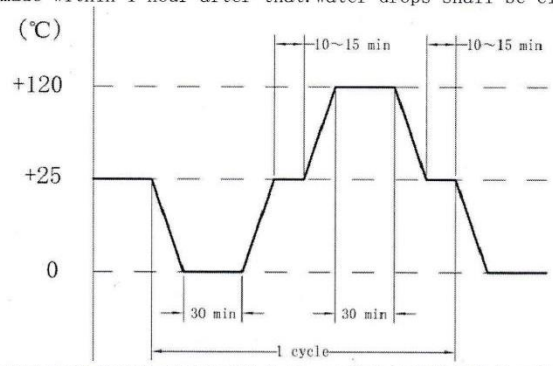
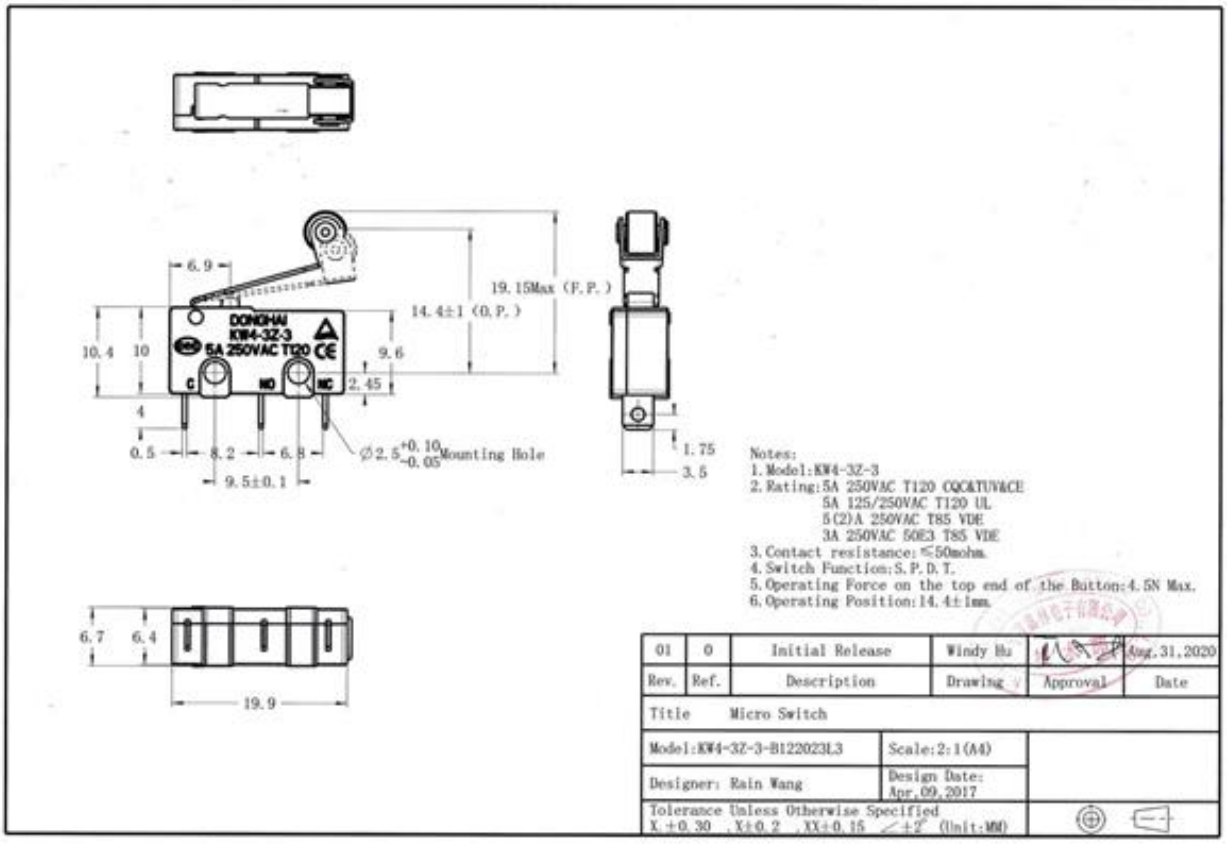
7. 耐候性能 Weather Proof Characteristics:

	项目Item	标准Criteria	实验方法Test Method
7.1	低温 Cold Proof	实验后 a)根据4.1项检查接触电阻，其数值为最大100mΩ。 b)根据4.2项检查绝缘电阻，其数值为最小10MΩ。 c)根据4.3项检查抗电强度，其外观及结构应无损坏。 After test: a) Check Contact resistance as per item 4.1 but Insulation resistance 100mΩ Min. b)Check Insulation resistance as per item 4.2 but Insulation resistance 10MΩ Min. c)Check Dielectric Voltage as per item 4.3, The switch shall be free from abnormalities in appearance and construction.	试件在 0±2° C 的温控箱内保持96小时，然后在正常温度和湿度下恢复2小时，并在此后1小时内对试品进行测量，水滴应消失。 After testing at 0±2° C for 96 hours, the switch can stay under normal temperature and humidity conditions for 2 hours, and measurement shall be made within 1 hour after that. Water drops shall be eliminated.
7.2	高温 Hot Proof		试件在 120±2° C 的温控箱内保持96小时，然后在正常温度和湿度下恢复2小时，并在此后1小时内对试品进行测量。 After testing at 120±2° C for 96 hours, the switch can stay under normal temperature and humidity conditions for 2 hours and measurement shall be made within 1 hour after that.
7.3	恒定湿热 Moisture Resistance		试件在40±2° C，90-95%RH的温控箱内保持96小时，然后在正常温度和湿度下恢复2小时，并在此后1小时内对试件进行测量，水滴应消失。 After testing at 40±2° C, 90-95% RH for 96 hours, the switch can stay under normal temperature and humidity conditions for 2 hours, and measurement shall be made within 2 hour after that. Water drops shall be eliminated.
7.4	温度转换 Temperature Cycling		试件按下述实验条件试验4个循环，然后在正常温度和湿度下恢复2小时，并在此后1小时内对试验品进行测量，水滴应消失。 After 4 cycles of below conditions, the switch can stay under normal temperature and humidity conditions for 2 hours, and measurement shall be made within 1 hour after that. Water drops shall be eliminated.  在经受5次循环温度变化试验之后，开关在常温常湿条件下恢复1小时，然后在1小时内完成测量，要除去凝露。 After 5 cycles of temperature cycling test, the switch can stay under normal termperature and humidity conditions, and measurement shall be made within 1hour, water drops shall be eliminated.
7.5	耐焊接热 Solder Resistance		焊接温度Temperature: Max. 260℃, 焊接时间Time: 3 sec 焊锡后超过90%的端子表面须被覆盖。 More than 90% of the terminal surface after soldering must be covered
7.6	震动测试 Vibration Proof		开关采用常规的安装方式牢固地安装在试验设备上，并在下述参数条件下进行试验: (1)振频=10～55Hz (2)振幅 1.5mm (3)振动变化速率:10～55～10Hz 大约1分钟 (4)变频方法:对数或线性式 (5)振动方向:三个相互垂直的方向，其中一个方向应是促动元件运动的方向。 (6)时间:每个方向2小时（共6个小时） Switch shall be secured to a testing machine by a normal mounting device and method. Switch shall be measured after following test. (1)Vibration frequency range=10～55Hz (2)Total amplitude= 1.5mm (3)Sweep ratio:10～55～10Hz Approx. 1min (4)Method of changing the sweep vibration frequency:logarithmic or linear. (5)Direction of vibration:Three perpendicular Direction including actuating direction. (6)Duration:2 hours (6 hours in total)

Data Sheet


6.9
19.15Max (F.P.)
14.4±1 (O.P.)
DONGHAI
KW4-3Z-3
5A 250VAC T120
10.4
10
9.6
2.45
4
0.5
8.2
6.8
9.5±0.1
Ø2.5 +0.10 -0.05 Mounting Hole
1.75
3.5
6.7
6.4
19.9
Notes:
1. Model:KW4-3Z-3
2. Rating:5A 250VAC T120 CQC&TUV&CE
5A 125/250VAC T120 UL
5(2)A 250VAC T85 VDE
3A 250VAC 50E3 T85 VDE
3. Contact resistance:≤50mohm.
4. Switch Function:S.P.D.T.
5. Operating Force on the top end of the Button:4.5N Max.
6. Operating Position:14.4±1mm.
01 | 0 | Initial Release | Windy Hu | Aug.31,2020
Rev. | Ref. | Description | Drawing | Approval | Date
Title Micro Switch
Model:KW4-3Z-3-B122023L3 | Scale:2:1(A4)
Designer: Rain Wang | Design Date: Apr.09,2017
Tolerance Unless Otherwise Specified
X:±0.30 , X±0.2 , XX±0.15 , ±2° (Unit:MM)