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| DOCUMENT NO. DN121121-15 | TITLE SPECIFICATION FOR APPROVAL | PAGE 1/3 |
| Model & Spec: KW3A-16Z5-A200 | 產品規格書 | DONGNAN |

1 General

- 1.1 Application This specification is applied to KW3A Micro Switch used for electronic equipment.
- 1.2 Operating temperature range -40°C to +105°C
- 1.3 Test conditions Unless otherwise specified. The atmospheric conditions for making measurements and tests are as follows
- Ambient temperature: 15~35°C
- Relative humidity: 45~85%
- Air pressure: 86~106kPa (860~1060 mbar)
- Should any doubt arise in judgment. tests shall be conducted at the following conditions.
- Ambient temperature: 20±2°C
- Relative humidity: 60~70%
- Air pressure: 86~106kPa (860~1060 mbar)

2 Appearance construction and dimensions

- 2.1 Appearance Switch shall have good finishing, and no rust crack or plating failures.
- 2.2 Construction and dimensions Refer to individual product drawing.

3 Ratings

16A125VAC T105 16GPA 125/250VAC 16(4)A 125/250VAC 10A 30VDC 1/3hp 125VAC 5E4 40T105 50-60Hz(UL CUL)
16(4)A250VAC 5E4 10T105(VDE CQC FIMKO NEMKO SEMKO CE EK)
16(4)A 125/250VAC 10A 30VDC 5E4 40T105 50-60Hz(DEMKO ENEC CB)

4 Electrical specifications

| NO. | Items | Test conditions | Criteria |
|-----|-----------------------|--|-------------------------------------|
| 4.1 | Contact resistance | Shall be measured at 1A,5V DC by voltage drop method after some operations without load. Applied position: Between terminal and terminal | 50mΩ MAX |
| 4.2 | Insulation resistance | Test voltage:500VDC, measured after 1 min ±5s Applied position: 1)Between terminal and terminal 2)Between terminal and ground | 100MΩ MIN |
| 4.3 | Voltage proof | Following test voltages shall be applied for 1 min. (Cut-off current:0.5mA) 1)Between terminal and terminal :1000VAC (50~60Hz) 2)Between terminal and ground: 2000V AC(50~60Hz) | No dielectric breakdown shall occur |

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| YUEQING DONGNAN ELECTRONICS CO.,LTD | | WRITTEN BY 陈丹琼 20121121 | CHECKED BY 柴国旗 20121121 |
| | | APPROVED BY 江小林 20121121 | |

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5 Mechanical specifications

| NO. | Item | Test conditions | Criteria |
|---|----------------------------------|--|--|
| 5.1 Operating character- istic | 5.1.1 Operating force (OF) | The force which moves the actuating part from the free position to the actuating position and reverses the live contact from the actuating part | 1.1N MAX |
| | 5.1.2 Release force (RF) | The force which is required to reverse the live contact from the actuating part | 0.2N MIN |
| | 5.1.3 Pre Travel (PT) | The distance for the actuating part to travel from the free position to the actuating position | 4mm MAX |
| | 5.1.4 Movement Differential (MD) | The distance for the actuating part to travel from the actuating position to the returning position | 1mm MAX |
| | 5.1.5 Over Travel (OT) | The distance for the actuating part to travel from the actuating position to the actuating limit position | 2mm MIN |
| | 5.1.6 Operating Position (OP) | After the force is placed on the actuating part the live contact from the free position state to reversing position | 21.4±1.2mm |
| 5.2 | Actuator strength | It shall satisfy following condition when a thrust load of the specified to the operating direction vertically for 1 minutes | 10N |
| 5.3 | Terminal strength | Insert and pull out | 25N |
| 5.4 | Vibration | Switch shall be secured to a lasting 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 directions including actuator. 6) Duration: 2 h each (6 h in total) | Contact resistance(item 4.1): 100mΩ MAX Insulation resistance (item 4.2): 50MΩ MIN Voltage proof: (item 4.3) No dielectric breakdown shall occur. Operating characteristic (item 5.1): Operating characteristic variety Within ±10% of specified value . Shall be free from mechanical abnormalities. |
| 5.5 | Shock | Switch shall be measured after following test at the condition of releasing self-lock. 1) Mounting method: Normal mounting method 2) Acceleration: 30g 3) Duration: 11ms 4) Test direction: 6 directions 5) Number of shocks: 3 times per direction (18times in total) | |

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6 Durability

| NO. | Item | Test conditions | Criteria |
|-----|-----------------------|--|--|
| 6.1 | Cold | After testing at $-40\pm 2^{\circ}\text{C}$ for 96 h, the switch shall be allowed to stand under normal room temperature and humidity condition for 1h, and then measurement shall be made within 1 h. water drops shall be removed. | Contact resistance(item 4.1): 100mΩ MAX Insulation resistance (item 4.2): 50MΩ MIN |
| 6.2 | Dry heat | After testing at $105\pm 2^{\circ}\text{C}$ for 96 h, the switch shall be allowed to stand under normal room temperature and humidity condition for 1h, and then measurement shall be made within 1 h. | Voltage proof: (item 4.3) No dielectric breakdown shall occur. Operating characteristic (item 5.1): |
| 6.3 | Damp heat | After testing at $40\pm 2^{\circ}\text{C}$ and 90-95%RH for 96 h, the switch shall be allowed to stand under normal room temperature and humidity condition for 1h, and then measurement shall be made within 1 h. water drops shall be removed. | Operating characteristic variety Within $\pm 10\%$ of specified value . No abnormalities shall be recognized in appearance and construction. |
| 6.4 | Change of temperature | After 20 cycles of following conditions the switch shall be allowed to stand under normal room temperature and humidity condition for 1h, and then measurement shall be made within 1 h. water drops shall be removed. | |
| 6.5 | Salt mist | Switch shall be checked after following lest. 1) Temperature: $35\pm 2^{\circ}\text{C}$ 2) Salt solution: $5\pm 1\%$ (solids by mass) 3) Duration: $24\pm 1\text{h}$ After test, salt deposit shall be removed in running water | No remarkable corrosion shall be recognized in metal part |

7 Durability

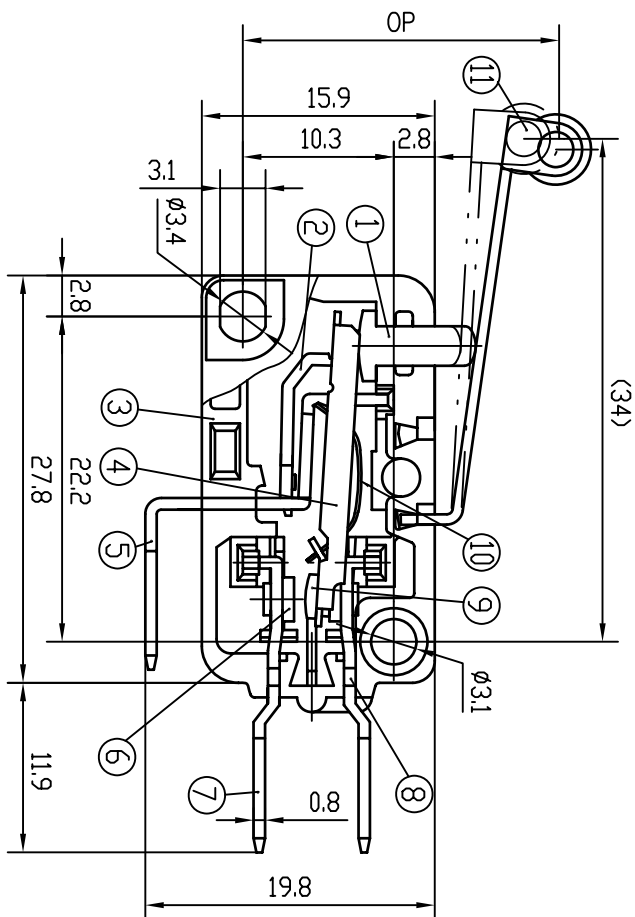
| NO. | Item | Test condition | Criteria | | | | | | | | | | | | | | | | | | |
|-------|---|---|--|-----------------|---------------------|--------------|----------------|---------------------|-------|------|-------|---------|-----------------|----------|-------|------|------|----------|-----------------|-------------|---|
| 7.1 | Endurance (According to UL61058) | 1/3hp 125VAC Switch shall be operated according to following sequence (Test1~Test2) <table border="1" data-bbox="432 1088 1042 1285"> <thead> <tr> <th></th> <th>Voltage</th> <th>Current</th> <th>Power factor</th> <th>Operation rate</th> <th>Number of operation</th> </tr> </thead> <tbody> <tr> <td>Test1</td> <td>125V</td> <td>43.2A</td> <td>0.4-0.5</td> <td>6-10 cycles/min</td> <td>50cycles</td> </tr> <tr> <td>Test2</td> <td>125V</td> <td>7.2A</td> <td>0.75-0.8</td> <td>6-10 cycles/min</td> <td>50000cycles</td> </tr> </tbody> </table> Voltage proof(Cut-off current:0.5mA) Test voltages shall be applied for 5s 16GPA 125/250VAC; 10A 30VDC Switch shall be operated 50,000 cycles at 15~20 cycles/min Voltage proof(Cut-off current:0.5mA) Test voltages shall be applied for 5s. | | Voltage | Current | Power factor | Operation rate | Number of operation | Test1 | 125V | 43.2A | 0.4-0.5 | 6-10 cycles/min | 50cycles | Test2 | 125V | 7.2A | 0.75-0.8 | 6-10 cycles/min | 50000cycles | Insulation resistance(item 4.2): 50MΩ MIN Voltage proof: Terminal and ground:1000VAC No dielectric breakdown shall occur. Operating characteristic (item 5.1): Operating characteristic variety Within $\pm 20\%$ of specified value . 6000cycles, Temperature rise: 30°C MAX 50000cycles, Temperature rise: 55°C MAX No abnormalities shall be recognized in appearance and construction |
| | Voltage | Current | Power factor | Operation rate | Number of operation | | | | | | | | | | | | | | | | |
| Test1 | 125V | 43.2A | 0.4-0.5 | 6-10 cycles/min | 50cycles | | | | | | | | | | | | | | | | |
| Test2 | 125V | 7.2A | 0.75-0.8 | 6-10 cycles/min | 50000cycles | | | | | | | | | | | | | | | | |
| 7.2 | Endurance (According to EN61058-1 /IEC61058-1) | 16GPA 125/250VAC 10A 30VDC Switch shall be operated 50,000 cycles at 15~20 cycles/min Voltage proof(Cut-off current:0.5mA) Test voltages shall be applied for 5s. | Insulation resistance(item 4.2): 50MΩ MIN Voltage proof: Terminal and terminal:750VAC Terminal and ground:1500VAC No dielectric breakdown shall occur. Operating characteristic (item 5.1): Operating characteristic variety Within $\pm 20\%$ of specified value . Temperature rise: 55°C MAX No abnormalities shall be recognized in appearance and construction | | | | | | | | | | | | | | | | | | |

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| | 陈丹琼 20121121 | 柴国旗 20121121 | 江小林 20121121 |

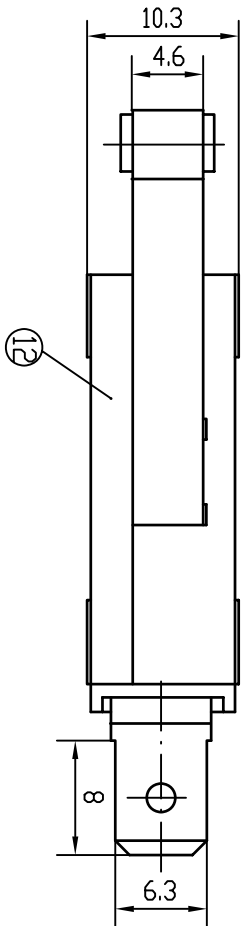
1. Specifications 技术特性表

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|---------------------------------|--|
| RATINGS 额定值 | 16(4) A250VAC 5E4 10T105 |
| ELECTRONICAL LIFE 电气寿命 | 16(4) A 125/250VAC 16A125VAC T105 |
| TEMPERATURE 温度等级 | 16GR 125/250VAC 10A 30VDC 1/3hp 125VAC 5E4 40T105 50-60Hz |
| INSULATION STRENGTH 绝缘电阻 | 100MΩ MIN |
| TEST VOLTAGE 耐电压 | AC1000V/2000V |
| CONTACT RESISTANCE 接触电阻 | 50mΩ MAX |
| OPERATING FORCE 动作力 (OP) | 1.1N MAX |
| RELEASE FORCE 释放力 (RF) | 0.2N MIN |
| OPERATING POSITION 动作位置 | 21.4 ± 1.2mm |
| MOVEMENT DIFFERENTIAL 差动行程 (MD) | 1mm MAX |



2. Parts List OF TYPE KW3A 零件材质表

| No. | Name 名称 | Material 材料 |
|-----|------------------|--|
| 1 | BUTTON 开关子 | Bakelite PF2A5-151 (j)b 黑色 电木粉 |
| 2 | LEVER 杠杆 | Brass alloy H62, Silver plated 黄铜, 镀银 |
| 3 | CASE 基座 | Plastic PBT4308 (灰色) 工程塑料 |
| 4 | PLATE MOVING 可动片 | Brass alloy H62, Silver plated 黄铜, 镀银 |
| 5 | TERMINAL 支架 | Brass alloy H65, Silver plated 黄铜, 镀银 |
| 6 | CONTACT 静触点 | AgNi10/Cu 银-镍/铜 |
| 7 | TERMINAL 端子 | Brass alloy H65, Silver plated 黄铜, 镀银 |
| 8 | TERMINAL 端子 | Brass alloy H65, Silver plated 黄铜, 镀银 |
| 9 | CONTACT 动触点 | AgNi10/Cu 银-镍/铜 |
| 10 | SPRING 簧片 | Beryllium alloy (Be2) 铍青铜 |
| 11 | MOVING ARMS 动臂 | Armor plate SPC-S0, Nickel plated 钢板, 镀镍 |
| 12 | COVER 盖 | Plastic PBT4308 (灰色) 工程塑料 |



SCHEMATIC DIAGRAM

3. Safety authentication 安全认证



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| DESIGN | 陈丹琼 20121220 | DESIGN | 陈丹琼 20121220 | KW3A-16Z5-A200 |
| CHECKED BY | 柴国旗 20121220 | CHECKED BY | 柴国旗 20121220 | |
| TECHNICS | | TECHNICS | | AVY8 3.604.016-1414 |
| EDITION | 20121220 | EDITION | 20121220 | |
| STANDARDIZATION | | STANDARDIZATION | | DONGNAN ELECTRONICS |
| APPROVED BY | 江小林 20121220 | APPROVED BY | 江小林 20121220 | |