1 General

1.1 Application — This specification is applied to KW10 Micro Switch used for electronic equipment.

1.2 Operating temperature range . — 0℃ to +85℃

1.3 Test conditions — Unless otherwise specified. The atmospheric conditions for making measurements and tests are as follows

Ambient temperature: 15~35℃

Relative humidity: 45~85%

Air pressure: 86~106kPa (860~1060 mbar)

Should any doubt arise in judgment. It shall be conducted at the following conditions.

Ambient temperature: 20±2℃

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

3A 125V AC(UL, CUL) 3(0.5)A 250V AC μ (TUV)

4 Electrical specifications

	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 “C” and terminal “NO”.	50mΩ MAX
4.2	Insulation resistance	Test voltage:500VDC, measured after 1 min ±5s Applied position: 1)Between terminal “C” and terminal “NO” 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 “C” and terminal “NO”:600VAC (50~60Hz) 2)Between terminal and ground: 1000V AC(50~60Hz)	No dielectric breakdown shall occur

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	0.46N MAX
	5.1.2 Release force (RF)	The force which is required to reverse the live contact from the actuating part	0.05N MIN
	5.1.3 Movement differential (MD)	The costume for the actuating part to travel from the actuating position to the returning position	0.7mm MAX
	5.1.4 Overtravel (OT)	The distance for the actuating part to travel from the actuating position to the actuating limit position	0.7mm MIN
	5.1.5 Operating Position (OP)	After the force is place on the actuating part the live contact from the free position state to reversing position	13±1.5㎜
5.2	Actuator strength	It shall satisfy following condition when a thrust load of the specified to the operating direction vertically for 1 minutes	15N
5.3	Terminal strength	Insert and pull out	60N
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): 100MΩ MIN Voltage proof: (item 4.3) No dielectric breakdown shall occur. Operating characteristic (item 5.1): Within 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)	Contact resistance(item 4.1): 100mΩ MAX Insulation resistance (item 4.2): 100MΩ MIN Voltage proof: (item 4.3) No dielectric breakdown shall occur. Operating characteristic (item 5.1): Within specified value . Shall be free from mechanical abnormalities
5.6	Drop impact resistance	Let the switch drop 5 times from 100cm height above the test concrete floor. (The test shall be performed keeping the switch lever release position)	Contact resistance(item 4.1): 100mΩ MAX Insulation resistance (item 4.2): 100MΩ MIN Voltage proof: (item 4.3) No dielectric breakdown shall occur. Operating characteristic (item 5.1): Within specified value . Shall be free from mechanical abnormalities

6 Durability

	Item	Test conditions	Criteria
6.1	Cold	After testing at 0±2℃ 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): 100MΩ MIN Voltage proof: (item 4.3) No dielectric breakdown shall occur. Operating characteristic (item 5.1): Within specified value . No abnormalities shall be recognized in appearance and construction
6.2	Dry heat	After testing at 55±2℃ 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.	Contact resistance(item 4.1): 100mΩ MAX Insulation resistance (item 4.2): 100MΩ MIN Voltage proof: (item 4.3) No dielectric breakdown shall occur. Operating characteristic (item 5.1): Within specified value . No abnormalities shall be recognized in appearance and construction
6.3	Damp heat	After testing at 40±2℃ 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.	Contact resistance(item 4.1): 100mΩ MAX Insulation resistance (item 4.2): 100MΩ MIN Voltage proof: (item 4.3) No dielectric breakdown shall occur. Operating characteristic (item 5.1): Within 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.	Contact resistance(item 4.1): 100mΩ MAX Insulation resistance (item 4.2): 100MΩ MIN Voltage proof: (item 4.3) No dielectric breakdown shall occur. Operating characteristic (item 5.1): Within specified value . No abnormalities shall be recognized in appearance and construction Solenoid shall be operated at rated voltage.
6.5	Salt mist	Switch shall be checked after following lest. 1) Temperature: 35±2℃ 2) Salt solution: 5±1% (solids by mass) 3) Duration: 24±1h After test, salt deposit shall be removed in running water	No remarkable corrosion shall be recognized in metal part

7 Durability

<table>
<tr><th></th><th>Item</th><th>Test condition</th><th>Criteria</th></tr>
<tr><td>7.1</td><td>Endurance
(According to
UL1054)</td><td>3A 125V AC
Switch shall be operated according to following sequence
(Test1~Test2)
<table>
<tr><th></th><th>Voltage</th><th>Current</th><th>Power factor</th><th>Operation rate</th><th>Number of operation</th></tr>
<tr><td>Test1</td><td>125V</td><td>4.5A</td><td>0.75-0.8</td><td>6-10 cycles/min</td><td>50cycles</td></tr>
<tr><td>Test2</td><td>125V</td><td>3A</td><td>0.75-0.8</td><td>6-10 cycles/min</td><td>6000cycles</td></tr>
</table>
Temperature rise
Difference between the steady terminal temperature and ambient.
Voltage proof(Cut-off current:0.5mA)
Following test voltages shall be applied for 1 min
Between terminal “C” and “NO”: 1000V AC(50-60Hz)
Between terminal and ground:1000VAC (50-60Hz)</td><td>Insulation resistance(item 4.2):
10MΩ MIN
Voltage proof:
Terminal and terminal:1000VAC
Terminal and ground:1000VAC
No dielectric breakdown shall occur.
Operating characteristic (item 5.1):
Within 10%,-30% of specified value .
Temperature rise:30℃ MAX
No abnormalities shall be recognized in appearance and construction</td></tr>
<tr><td>7.2</td><td>Endurance
(According to
EN 61058-1)</td><td>3(0.5)A 250VAC
Switch shall be operated 10,000 cycles at 15~20 cycles/min</td><td>Insulation resistance(item 4.2):
10MΩ MIN
Voltage proof:
Terminal and terminal:750VAC
Terminal and ground:750VAC
No dielectric breakdown shall occur.
Operating characteristic (item 5.1):
Within 10%,-30% of specified value .
Temperature rise:55℃ MAX
No abnormalities shall be recognized in appearance and construction</td></tr>
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