

Common Specifications

■Common Specifications for Miniature Switches (JIS C 6571)

〈Toggle, Pushbutton, Rocker, and Slide Switches〉

1. Initial Contact Resistance

The initial contact resistance is measured at each contact when opening and closing operations are conducted five times in a row at 2 to 4 VDC, 1A and the value shall be 20 mΩ or below.

2. Dielectric Strength

There is no problem when the 50-60 Hz AC current of 1,000 V at rated max. voltage is 125 V or 1,500 V at 250 V is applied for one minute across the terminals and across terminals and the ground that are insulated under the normal pressure.

3. Insulation Resistance

The insulation resistance is measured across the insulated terminal and across terminals and ground with a 500 VDC insulation resistance tester and the value shall be 100 MΩ or over.

4. Electrical Life

5,000 to 30,000 opening and closing operations are possible at the rate of 12 cycles a minute while applying the rated voltage and current.

5. Cold Resistance

There is no problem regarding electrical and mechanical operations such as cracks, breaks, and rattling on the housing and insulation materials even after the switch is left for two hours in the constant temperature bath of $-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$. In addition, after the test, the insulation resistance is measured after removing moisture sufficiently and leaving the switch as it is for one hour or longer and the value shall be 10 MΩ or over.

6. Heat Resistance

There is no excessive loosening and rattling even after the switch is left as it is for 16 hours in the constant temperature bath of $70^{\circ}\text{C} \pm 2^{\circ}\text{C}$. In addition, after the test, the insulation resistance is measured after being left for one hour, and the value shall be 100 MΩ or over.

7. Humidity Resistance

After leaving the switch as it is for 96 hours in the atmosphere of 95% relative humidity at temperature of $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$, moisture is removed, the insulation resistance is measured within five minutes, and the value shall be 10 MΩ or over.

8. Vibration Resistance

There is no problem such as wrong operations and breakage when vibrations of 10-55 Hz and total amplitude of 1.5 mm are applied to the switch in three directions for two hours, respectively.

9. Shock Resistance

There is no problem such as wrong operations and breakage when a shock of 490 m/s^2 (50 G) acceleration and 11 msec duration is applied to the switch in six directions three times, respectively.

10. Electrostatic Capacity

When the electrostatic capacity is measured across terminals at an AC voltage of 1 MHz \pm 200 Hz frequency, the value shall be 5 pF or below.

11. Operating Temperature Range

The range shall be -15°C to $+70^{\circ}\text{C}$.
