

The following testing methods are used to test the reliability of Mitsumi POLIVARICONS, such as the mechanical strength, durability and the weathering ability.

1. Standard Rest Conditions

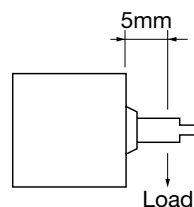
The standard test conditions shall include temperature of $20^{\circ}\text{C}\pm 2^{\circ}\text{C}$ and relative humidity of $65\%\pm 5\%$. However, in case no questions are raised in connection with the test scores, tests may be conducted at temperatures ranging between 5 and 35°C and at relative humidity ranging between 45 and 85%.

2. Shaft Rotation Stopping Strength

After applying the torsional moment to the rotation stopper for 10 ± 1 seconds, the variation in the rotational angle should not be more than 2° . This is taken as normal standard but individual standards are also available for reference.

3. Shaft Load Characteristics

3-1. Axial Direction Load
After impressing a 1kg load in the axial direction for 10 ± 1 seconds the capacitance variation should be within 1% and the torque should satisfy the standard value.



3-2. Load at Right Angle to Axial Direction
After applying a load of 1kg vertically to the axis at the state of maximum capacitance for 60 seconds the capacitance variation should be within $\pm 1\%$. The point at which the load is applied shall be the axis length of 5mm from the mounted face.

4. Vibration

After applying, at the state of near maximum capacitance, vibrations with 10~55Hz pitch, full amplitude of 1.5mm and sweep of 10~55~10Hz in 3 directions for 1 hour each for a total of 3 hours, the capacitance variation should be within $\pm 1\%$ of the initial value and no mechanical damage, such as play and looseness, should be found.

5. Moisture Resistance (under regular state)

The insulation resistance and the Q should satisfy the standard values even after holding the sample for 96 \pm 2 hours at a temperature of $40\pm 2^{\circ}\text{C}$ and relative humidity of 90~95%, and then leaving it under standard test conditions for an hour or two.

6. Durability (rotational life-span)

The conditions cited below should be satisfied after rotating the shaft 10,000 times at a cycle of 10~15 per minute and at a rotational range of 80 to 90%.

- (1) The maximum variable capacitance variation should be $\pm 1\%$.
- (2) The shaft rotational torque should be within the standard value.
- (3) The contact resistance should be $20\text{m}\Omega$ or less.

7. Heat Resistance of Terminals

Soldering heat shall be applied to 1~2mm of the terminal tip at the conditions of max. capacitance. (However, print circuit board with 0.5~1.6mm thickness shall be used as radiating plate).

- (1) Dip soldering
Temperature : $260\pm 5^{\circ}\text{C}$, Time : $5\pm 0.5\text{S}$.
- (2) Handled soldering
Temperature : $350\pm 5^{\circ}\text{C}$, Time : $3\pm 0.5\text{S}$.

Meanwhile, detail of specification is shown at the individual spec sheet.
