

TITLE	PRODUCT SPECIFICATIONS					
MODEL No.	TACT LEVER SWITCHES (L002)					PAGE 1/4

1. GENERAL MATTERS

- 1.1 Application This specification is applied to low current circuit push switch for electronic equipment
- 1.2 Operating temperature range -20~80°C
- 1.3 Test conditions Unless otherwise specified, the atmospheric conditions for making and tests are as follows.
- Ambient temperature : 5~35°C
- Relative humidity : 45~85%
- Air pressure : 86~106kPa (860~1060mbar)
- Should any doubt arise in judgment, tests shall be conducted at the following conditions.
- Ambient temperature : 20±2°C
- Relative humidity : 60±5%RH
- Air pressure : 86~106kPa (860~1060mbar)

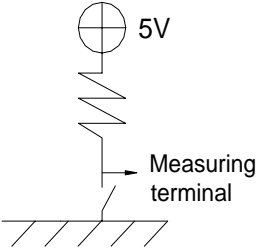
2. Appearance, construction and dimensions


- 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.
- 2-3 Marking Refer to individual product drawing.

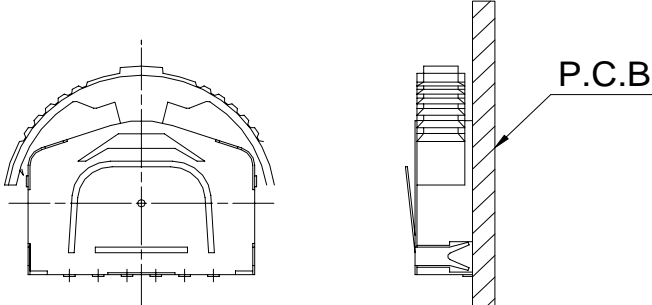
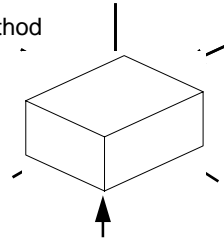
3. Rating

5V DC 10mA (Resistive load)

4. Electrical specification

	PROPERTY	TEST CONDITION	PERFORMANCE
4.1	Output voltage	Shall be measured at 10mA , 5V DC <Measuring Circuit> (Resistive load) Measure point is voltage level between ground and measuring terminal. DC 5V, 1mA	
4.2	Insulation resistance	Test voltage : 100V DC, measured after 1min±5s Applied position : Between all terminals Between terminals and ground(frame)	100MΩ MIN
4.3	Voltage proof	Test voltage : 100V AC(50~60Hz, cut-off current 2mA) Duration : 1min Applied position : Between all terminals Between terminals and ground(frame) 100V AC (50~60Hz, 2mA)	

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5. Mechanical specification			
	PROPERTY	TEST CONDITION	PERFORMANCE
5.1	Operating force	A static load shall be applied to the tip of actuator in operating direction	Refer to individual product drawing.
5.2	Robustness of terminal	A static load of 2N(200gf) shall be applied to the tip of terminal in a desired direction for 1min. the test shall be done once per terminal.	shall be free from terminal looseness, damage and breakage of terminal holding portion. terminals maybe bent after test.
5.3	Robustness of actuator	<p>A static load of 50N(5.0kgf) shall be applied in the push direction of actuator for 15s.</p> <p>A static load of 10N(1.0kgf) shall be applied in the rotation direction of actuator for 15s.</p> <p>A static load of 5N(0.5kgf) shall be applied in the perpendicular direction of operation at the tip of actuator for 15s.</p> <p>Switch shall be measured after securing to an oblique line on frame.</p> 	shall be free from pronounced wobble, deformation and mechanical abnormalities.
5.4	Wobble of actuator	Run-out(p-p) shall be measured by applying a static load of 1N(102gf) in the perpendicular direction of operation at the tip of actuator.	p-p : 2mm MAX
5.5	Vibration	<p>Switch shall be secured to a testing machine by a normal mounting device and method. Switch shall be measured after following test.</p> <p>(1)Vibration frequency range : 10~55Hz</p> <p>(2)Total amplitude : 1.5mm</p> <p>(3)Duration : 2h each (6h in total)</p>	<p>Open voltage(item4.1)1V MAX</p> <p>Insulation resistance(item4.2): 100mΩ MIN.</p> <p>Voltage proof(item 4.3) : Apply 100V AC for 1min</p> <p>No dielectric breakdown shall occur.</p> <p>Operating force(item 5.1): Within specified value.</p> <p>Shall be free from mechanical abnormalities.</p>
		<p>Switch shall be measured after following test.</p> <p>(1)Mounting method : normal mounting method</p> <p>(2)Acceleration : 490m/s(50G)</p> <p>(3)Duration : 11ms</p> <p>(4)Test direction : 6 directions</p> <p>(5)Number of shocks: 3times per direction (18 times in total)</p> 	↑

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5. Mechanical specification			
	PROPERTY	TEST CONDITION	PERFORMANCE
5.7	Resistance to soldering heat	<p>The test shall be conducted under the following conditions.</p> <p>Re-flow soldering</p> <p>The switch shall be stored in a chamber at 150±2℃ for 3min Then the switch shall be kept in a chamber at 230±2℃ for 1min The measurement shall be made after going back to normal room temperature.</p> <p>Manual soldering</p> <p>Wattage of soldering iron : 15W Diameter of soldering iron tip : φ1mm Temperature of soldering iron tip : 350±5℃ Soldering time : 3s MAX</p> <p>Above conditions shall be applied to Glass fabric base, epoxy resin P.C.B of 0.3~0.8mm thick</p>	No abnormalities shall be observed in appearance and operation. The electrical performance requirements specified in item 4 shall be satisfied
6. Durability			
	PROPERTY	TEST CONDITION	PERFORMANCE
6.1	Operating life Without load Without load	Switch shall be operated 100,000 cycles at 15~20 cycles/min without load.	Oupet voltage(item4.1)1V MAX Insulation resistance(item4.2): 100mΩ MIN. Voltage proof(item 4.3) : Apply 100V AC for 1min
	Push Portion	Switch shall be operated 100,000 cycles at 15~20 cycles/min without load.	
6.2	Operating life With load Lever Portion	Switch shall be operated 100,000 cycles at 15~20 cycles/min with 5V DC 10mA. (65±30gf)	No dielectric breakdown shall occur. Operating force(item 5.1): Within specified value. Shall be free from mechanical abnormalities.
	Push Portion	Switch shall be operated 100,000 cycles at 15~20 cycles/min with 5V DC 10mA. (200±100gf)	
7. Environmental test			
	PROPERTY	TEST CONDITION	PERFORMANCE
7.1	Cold	After testing at -20±2℃ for 96h, the switch shall be allowed to stand under normal room temperature and humidity conditions for 1h, and then measurement shall be made within 1h, Water drops shall be removed.	Oupet voltage(item4.1)1V MAX Insulation resistance(item4.2): 100mΩ MIN. Voltage proof(item 4.3) : Apply 100V AC for 1min No dielectric breakdown shall occur. Operating force(item 5.1): Within specified value. Shall be free from mechanical abnormalities.
7.2	Change of temperature	<p>After 5cycles of following conditions, the switch shall be allowed to stand under normal room temperature and humidity conditions for 1h, and then measurement shall be made within 1h after that, Water drops shall be removed.</p> <p>70±2</p> <p>Normal room temperature</p> <p>-25±3</p> <p>30min 2~3min 30min 2~3min</p> <p>1 cycle</p>	

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	PROPERTY	TEST CONDITION	PERFORMANCE
7.3	Dry heat	After testing at 85±2℃ for 96h, the switch shall be allowed to stand under normal room temperature and humidity conditions for 1h, and then measurement shall be made within 1h.	Open voltage(item4.1)1V MAX Insulation resistance(item4.2): 100mΩ MIN. Voltage proof(item 4.3) :
7.4	Damp heat	After testing at 40±2℃ and 90~95%RH for 96h, The switch shall be allowed to stand under normal room temperature and humidity conditions for 1h, and then measurement shall be made within 1h after that Water drops shall be removed.	Apply 100V AC for 1min No dielectric breakdown shall occur. Operating force(item 5.1): Within specified value. Shall be free from mechanical abnormalities.
7.5	Salt mist	Switch shall be checked after following test. (1)Temperature : 35±2℃ (2)Salt solution : 5±1% (solids by mass) (3)Duration : 48±1h After the test , salt deposit shall be removed in running water	No remarkable corrosion shall be recognized in metal part.
8. Circuit Diagram			
Refer to individual product drawing.			
9. MATERIALS			
1) HOUSING (BASE) : UL94-HB NYLON THERMOPLASTIC			
2) COVER : TIN-PLATED, STAINLESS (SPTE)			
3) ACTUATOR (STEM) : UL-94-HB NYLON THERMOPLASTIC			
4) TERMINAL : BRASS WITH SILVER-PLATING (C2680R-EH)			