



ISO 9001 國際品質認證
ISO 9001 CERTIFICATE

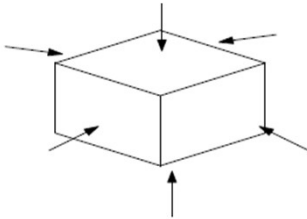
松暉電機工業股份有限公司
SONG HUEI ELECTRIC CO., LTD.
佛山市松暉電機科技有限公司
FOSHAN SONG HUEI ELECTRIC CO., LTD.

| 1.一般事項 General | | |
|--|--|---|
| 項目 Item | 測試條件 Test Conditions | 規格 Performance |
| 1 額定值 Rating | DC 30 V 0.1 A | / |
| 2.電氣特性 Electrical Characteristics | | |
| 項目 Item | 測試條件 Test Conditions | 規格 Performance |
| 2.1 接觸電阻 Contact resistance | 在以 5 V 10 mA 的直流電源或不低於 1 KHz 的交流電源的電路中，以一個等於 1.5 倍按力的靜負荷施加於手柄中心。 Applying a static load of 1.5 times operating force to the center of the stem , measurements shall be made with DC 5 V 10 mA or more than 1 KHz AC circuit. | ≤ 100 mΩ |
| 2.2 絕緣電阻 Insulation resistance | 輸入DC 100 V 電壓1分鐘按以下接觸方法測試： (1)排腳相互之間。 (2)排腳與外殼之間。 A voltage of DC 100 V shall be applied for 1 min after which measurement be made: (1) Between terminals. (2) Between individual terminals and frame. | ≥ 100 MΩ |
| 2.3 絕緣耐壓 Insulation voltage proof | 輸入AC 250 V (50 HZ ~60 HZ)電壓,1分鐘感度電流為0.5 mA 按以下接觸方法測試： (1)排腳相互之間。 (2)排腳與外殼之間。 AC 250 V rms (50 HZ ~60 HZ) for 1 min trip current 0.5 mA: (1) Between terminals. (2) between individual terminals and frame. | 無擊穿、無飛弧 There should be no breakdown and flashover. |
| 3.機械性能 Mechanical Characteristics | | |
| 項目 Item | 測試條件 Test Conditions | 規格 Performance |
| 3.1 按力 Operating force | 開關垂直於操作方向放置，在開關驅動件頂端中心逐漸施力，測量開關導通所需的最大力度。 Placing the switch at the direction of switch operation is vertical and then gradually increasing the load applied to the center of the stem, the maximum load required for the switch to come to a stop shall be measured. | 250 gf ± 70 gf |
| 3.2 總行程 Full travel | 開關垂直於操作方向放置，以一個等於 2 倍按力的靜負荷施加在開關驅動件頂端中心，測量頂端移動的距離。 Placing the switch at the direction of switch operation is vertical and then applying static load of 2 times operating force to the center of the stem; the travel distance for the switch to come to a stop shall be measured. | 2.5 ± 0.2 mm |
| 3.3 鎖定行程 Lock Travel | 開關處於鎖定狀態時與開關初始（斷開狀態）狀態時的高度差，即為開關的鎖定行程。 Placing the switch such that the direction of switch operation is vertical and then applying static load of 2times operating force to the center of the stem; the travel distance for the switch to come to a stop shall be measured. | 1.4 ± 0.2mm |
| 3.4 操作部位強度 Operating part strength | 在操作部位施加以下負載，時間15 s。 Apply following load on the tip of of operating part 15 s. <input type="checkbox"/> 操作方向Operation direction ... 80N <input type="checkbox"/> 引伸方向Drawing direction ... 20N <input type="checkbox"/> 操作方向直方向 Right direction against operating direction ... 10N | 柄部無嚴重變形,可以正常工作。 The lever shall have no serious deformation and function is normally. |
| 3.5 端子強度 Terminal strength | 在任意一個方向的前端加 5N 力度測試，時間為10秒。 A static load of 500 gf shall be applied to the terminal for 10 Sec. in any direction. | 在端子中沒有裂開、鬆動等異常、滿足於機械、電器性能 Electrical characteristics shall be satisfied without damage or excessive looseness of actuator. |
| 3.6 鎖定強度 Locking Strength | 在鎖緊狀態下對引伸方向施加5N 的力10 秒(本標準適用於開關鎖緊機構) Apply force 5N to drawing direction for 10s at locking condition of switch. (This standard applies to switch lock mechanism.) | 開關鎖定功能正常。 No abnormalities shall occur in appearance and function |
| 3.7 振動 Vibration | 根據以下給定條件進行測試： Measurement shall be made following the test forth below: (1) 振動頻率範圍： 10 ~ 55 ~ 10 Hz。 Vibration frequency range: 10 to 55 to 10 Hz. (2) 振幅(峰~峰)： 1.5 mm。 Amplitude: 1.5 mm. (3) 振動方向： 包括手柄行程方向在內的三個相互垂直的方向。 Direction of vibration :three mutually perpendicular direction Including the direction of stem travel. (4) 測試時間： 每次 2 hours. Duration: each 2 hours. | 項目： 3.1、3.2、3.3 Item: 3.1、3.2、3.3 |



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| | | | |
|-----|-------------|--|--|
| 3.8 | 衝擊 Shock | <p>根據下列條件進行衝擊試驗 Test by following conditions</p> <p>(1)安裝方法：正常安裝 (1)Installation method: normal</p> <p>(2)加速度：784m/s² (2)Acceleration: 784m/s²</p> <p>(3)作用時間：11ms (3)Acting time: 11ms</p> <p>(4)測試方向：6個方向 衝擊次數：每個方向3次，共計18次 (4)Test direction: 6 directions Times: 3 times/direction ,total 18 times</p> |  <p>項目：3.1、3.2、3.3 Item: 3.1、3.2、3.3</p> |
|-----|-------------|--|--|

4. 極限機械性能 Endurance Specification

| 項目 Item | 測試條件 Test Conditions | 規格 Performance |
|---------|--|--|
| 4.1 | <p>鹽霧試驗 Salt mist</p> <p>在以下設定條件下進行測量： The switch shall be checked after following test:</p> <p>(1) 溫度：35 ± 2 °C Temperature: 35 ± 2 °C</p> <p>(2) 鹽溶液濃度：5 ± 1 % (品質百分比) Salt solution: 5 ± 1 % (solids by mass)</p> <p>(3) 時間：8 h ± 1 h Time: 8 h ± 1 h</p> <p>實驗後的鹽沉積物用水沖掉 After test, salt deposit shall be removed by running water.</p> | <p>金屬件上沒有腐蝕斑點。 No remarkable corrosion shall be recognized in metal part.</p> |
| 4.2 | <p>工作壽命 Operation life</p> <p>根據下面的測試要求進行測試： Measurement shall be made following the test set below:</p> <p>(1) DC 5 V 50 mA 帶負載。 (1) DC 5 V 50 mA resistive load.</p> <p>(2) 按動速率：10 ~ 15 次 / min。 (2) Rate of operation: 10 ~ 15 times / min.</p> <p>(3) 按力：按力的 1.5 倍。 (3) Operating force: 1.5 times of operating force.</p> <p>(4) 無故障壽命：10,000 次。 fault-free life: 10,000 cycles.</p> | <p>接觸電阻：≤ 2Ω Contact resistance: ≤ 2Ω</p> <p>絕緣電阻：≥ 10 MΩ Insulation Resistance: ≥ 10 MΩ</p> <p>項目：2.3、3.1、3.2、3.3 Item: 2.3、3.1、3.2、3.3</p> |
| 4.3 | <p>可焊性 Solderability</p> <p>在以下設定條件下進行測量： Measurements shall be made following the below test set:</p> <p>(1) 焊接溫度：245 ± 5 °C Solder temperature: 245 ± 5 °C</p> <p>(2) 浸入時間：5 s ± 0.5 s Immersion time: 5 s ± 0.5 s</p> | <p>除邊緣外塗層應均勻覆蓋 90 % 以上。 Except for the edge, the coating should cover a minimum 90 %.</p> |
| 4.4 | <p>耐焊性試驗 Resistance to soldering heat test</p> <p>在以下設定條件下進行測量： Measurements shall be made following the test set forth below:</p> <p>(1) 焊接溫度：260 ± 5 °C Solder temperature : 260 ± 5 °C</p> <p>(2) 浸入時間：3s ± 1s Immersion time: 3s ± 1s</p> | <p>本體無變形，能滿足於機械、電氣性能。 Without deformation of case or excessive looseness of terminal selectrical characteristics shall be satisfied</p> |

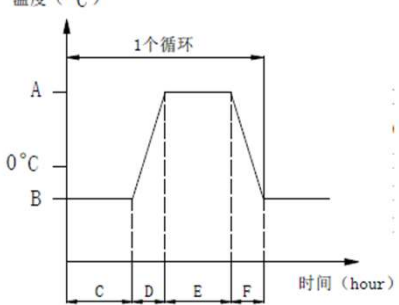
5. 極限電氣性能 Environmental Specification

| 項目 Item | 測試條件 Test Conditions | 規格 Performance |
|---------|---|--|
| 5.1 | <p>低溫試驗 Resistance to low temperature</p> <p>樣品應按照以下實驗條件進行測試，實驗後樣品應放在常溫及標準濕度的環境中 1 小時後做性能測試： Following the test set below, then the sample shall be left in normal temperature and humidity conditions for 1 hour before measurements are made:</p> <p>(1) 溫度：-30 ± 2 °C Temperature: -30 ± 2 °C</p> <p>(2) 時間：96 h Time: 96 h</p> | <p>項目：3.1、3.2、3.3 Item: 3.1、3.2、3.3</p> |
| 5.2 | <p>高溫試驗 Heat resistance</p> <p>樣品應按照以下實驗條件進行測試，實驗後樣品應放在常溫及標準濕度的環境中 1 小時後做性能測試： Following the test below, then the sample shall be left in normal temperature and humidity conditions for 1 hour before measurements are made:</p> <p>(1) 溫度：80 ± 2 °C Temperature: 80 ± 2 °C</p> <p>(2) 時間：96 h Time: 96 h</p> | <p>項目：3.1、3.2、3.3 Item: 3.1、3.2、3.3</p> |
| 5.3 | <p>濕溫測試 Moisture resistance</p> <p>樣品應按照以下實驗條件進行測試，實驗後樣品應放在常溫及標準濕度的環境中 1 小時後做性能測試： Following the test set below, the sample shall be left in normal temperature and humidity conditions for 1 hour before measurements are made:</p> <p>(1) 溫度：60 ± 2 °C Temperature: 60 ± 2 °C</p> <p>(2) 相對濕度：90 % ~ 95 % Relative humidity: 90 % to 95 %</p> <p>(3) 時間：96 h Time: 96 h</p> | <p>接觸電阻：≤ 200 mΩ Contact resistance: ≤ 200 mΩ</p> <p>絕緣電阻：≥ 10 MΩ Insulation Resistance: ≥ 10 MΩ</p> <p>項目：2.3、3.1、3.2、3.3 Item: 2.3、3.1、3.2、3.3</p> |



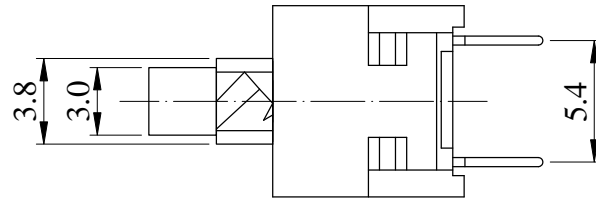
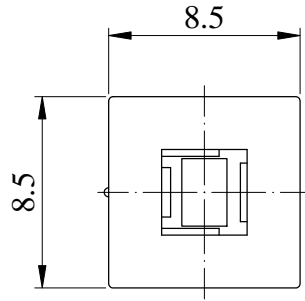
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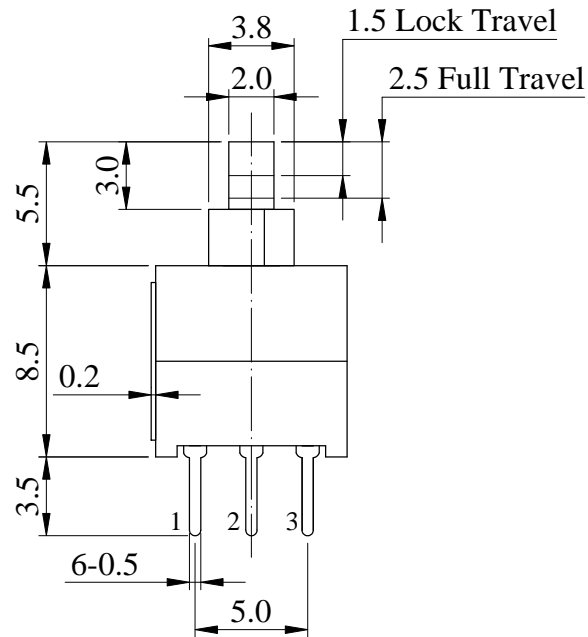
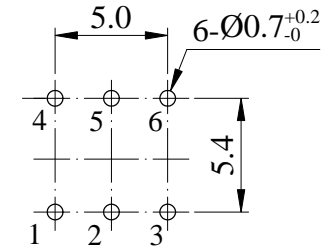
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|-----|----------------------------------|--|--------------------------------------|
| 5.4 | 溫度變化測試 Temperature cycle test | <p>根據下面的測試要求進行5次迴圈的溫度週期性測試，實驗後樣品應放在常溫及標準濕度的環境中1小時後做性能測試。測試期間樣品應保持乾燥。</p> <p>After 5 cycles of following conditions, the sample shall be allowed to stand under normal temperature and humidity conditions for 1 h. and measurements shall be made. During the test water drops shall be removed.</p> <p>溫度 (°C)</p>  <p>A: $+80 \pm 2^{\circ}\text{C}$ B: $-30 \pm 2^{\circ}\text{C}$ C: 2 小时 D: 1 小时 E: 2 小时 F: 1 小时</p> | 項目: 3.1、3.2、3.3 Item: 3.1、3.2、3.3 |
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6. 焊接條件 Soldering Conditions

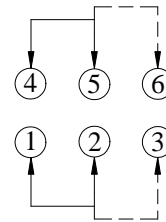
| 項目 Item | 測試條件 Test Conditions | 規格 Performance | | | | | | | | | | | | | | |
|-----------------------------------|--|----------------|--------------|-------------------------|---|--------------------------------|--|---------------------------|-----------|-------------------------------|----------------------------|-----------------------------------|----------|-----------------------------|------------------------|--|
| 6.1 手工焊接 Hand soldering | <p>請按以下條件下進行焊接： Please practice according to below conditions:</p> <p>(1) 焊錫溫度: $\leq 350^{\circ}\text{C}$。 Soldering temperature: 350°C max. (2) 連續焊接時間: $\leq 3\text{ s}$ max。 Continuous soldering time: $\leq 3\text{ s}$ max.</p> | / | | | | | | | | | | | | | | |
| 6.2 | <table border="1"> <thead> <tr> <th data-bbox="134 943 384 976">項目 Items</th> <th data-bbox="384 943 1161 976">條件 condition</th> </tr> </thead> <tbody> <tr> <td data-bbox="134 976 384 1048">助焊劑附著量 Flux built-up</td> <td data-bbox="384 976 1161 1048">不附著於零件貼裝面的程度。 Mounting surface should not be coated with flux.</td> </tr> <tr> <td data-bbox="134 1048 384 1120">預熱溫度 Preheating temperature</td> <td data-bbox="384 1048 1161 1120">印刷電路板焊接面的周圍溫度 100°C max。 Ambient temperature of the soldered surface of PC board 100°C max.</td> </tr> <tr> <td data-bbox="134 1120 384 1191">預熱溫度時間 Preheating time</td> <td data-bbox="384 1120 1161 1191">60 s max.</td> </tr> <tr> <td data-bbox="134 1191 384 1263">焊接溫度 Soldering temperature</td> <td data-bbox="384 1191 1161 1263">260°C max.</td> </tr> <tr> <td data-bbox="134 1263 384 1335">接焊浸漬時間 Continuous dipping time</td> <td data-bbox="384 1263 1161 1335">5 s max.</td> </tr> <tr> <td data-bbox="134 1335 384 1404">焊接次數 Number of soldering</td> <td data-bbox="384 1335 1161 1404">2 次以下。 2 times max.</td> </tr> </tbody> </table> | 項目 Items | 條件 condition | 助焊劑附著量 Flux built-up | 不附著於零件貼裝面的程度。 Mounting surface should not be coated with flux. | 預熱溫度 Preheating temperature | 印刷電路板焊接面的周圍溫度 100°C max。 Ambient temperature of the soldered surface of PC board 100°C max. | 預熱溫度時間 Preheating time | 60 s max. | 焊接溫度 Soldering temperature | 260°C max. | 接焊浸漬時間 Continuous dipping time | 5 s max. | 焊接次數 Number of soldering | 2 次以下。 2 times max. | |
| 項目 Items | 條件 condition | | | | | | | | | | | | | | | |
| 助焊劑附著量 Flux built-up | 不附著於零件貼裝面的程度。 Mounting surface should not be coated with flux. | | | | | | | | | | | | | | | |
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| 預熱溫度時間 Preheating time | 60 s max. | | | | | | | | | | | | | | | |
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| 焊接次數 Number of soldering | 2 次以下。 2 times max. | | | | | | | | | | | | | | | |



Mounting Hole



SCHEMATIC



| Non notation tolerance | |
|------------------------|------|
| < 10 | ±0.3 |
| 10 ~ 100 | ±0.5 |
| > 100 | ±0.8 |



SONG HUEI ELECTRIC CO., LTD.
FOSHAN SONG HUEI ELECTRIC CO., LTD.

MODEL: PS2201/LOCK/0245



④

③

②

①

整理图元

增加LOCK

增加0245

SUBJECT

何鸿根

何鸿根

何鸿根

NAME

2019.01.07

2017.11.27

2017.3.08

DATE

Approval



Checked



Projected



UNIT

mm

SCALE

3:1

VERSION

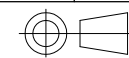
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