

# SRRN SWITCHES SPECIFICATIONS

## SRRN 開 關 製 品 規 格 書

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SRRN-006	1.0	(1/4)

### 1. General 一般事項

1.1 Application: This specification is applied to low current circuit(Secondary circuit) switch used for electronic equipment.  
適用範圍：此規範適用於低電流回路(2 次側回路)電子機器用迴轉式開關。

1.1 Operating Temperature Rang 使用溫度範圍：-10~60°C

1.2 Test Conditions: The standard test conditions shall be 5~35°C in temperature, 45~85%RH and 860~1060mbar in atmospheric pressure. Should any doubt arise in judgment, tests shall be conducted at 20±2°C, 65±5%RH and 860~1060mbar.

試驗狀態：若無特別規定限制，則以溫度 5~35°C，相對溼度 45~85%，氣壓 860~1060mbar 之標準狀態測之。但對此標準狀態之測定值發生判定疑問或有特別要求則以基準狀態(溫度 20±2°C，相對溼度 65±5%，氣壓 860~1060mbar)為準測定。

### 2. Appearance, Construction and dimensions. 外觀、構造、尺寸

2.1 Appearance: Switch shall have good finishing, and shall have no rust, crack or plating failure.

外觀：各部分之加工須良好，機能上不能有生銹、刮傷、裂痕、電鍍不良及剝離等現象發生。

2.2 Construction and dimensions: As per product drawing

構造、尺寸：依組立圖。

### 3. Rating 額定：0.15A 12V DC (resistance load)(阻抗負載)

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### 4. Electrical performance 電氣性能

	Property 項目	Test conditions 試驗條件	Performance 判定基準
4.1	Contact resistance 接觸阻抗	To be measured with 1 kHz±200 Hz max. 20mV DC max. 50mA or 5V DC 1A 1 kHz±200 Hz 電壓 20mV DC 以下，電流 50mA 以下測定或 5V DC 1A 電壓下降法測定	Max 50mΩ 50mΩ 以下
4.2	Insulation resistance 絕緣阻抗	To be measured with an insulation measuring device of 500V DC between all the terminals and between the terminals and the frame for 1 minute±5 seconds 以 500V DC 之電壓加於端子相互及端子與外框間 1 分±5 秒測定之	Min 100 MΩ 100 MΩ 以上
4.3	Voltage proof 耐電壓	500V AC (50~60Hz) being applied between all the adjacent terminals and between the terminal and frame for 1 minute. 以 500V AC (50~60Hz 感度電流 2mA)之電壓加於端子相互間及端子與外框間 1 分鐘測定之	Not breaking insulation 不可有絕緣破壞現象
4.4	Changeover timing 切換時間性		As per individual product drawing. 依組立圖

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### 5. Mechanical performance 機械功能

	Property 項 目	Test Conditions 試 驗 條 件	Performance 判定標準						
5.1	Operating torque 迴轉轉矩		As per individual product drawing. 依組立圖						
5.2	Terminal strength 端子強度	A static force of 500gf being applied in one direction on the tip of the terminal for 1 minute. One time per terminal. 端子前端任一方向加 500gf 之靜負荷一分鐘(每支端子限制一次)	The terminal may be deformed but shall not sustain any trouble as deviation and breaking of terminal and breaking of insulation material Electrical performance of the above clause 4 shall be assured 不能有端子脫落、破壞及絕緣板破損之現象，端子可以彎曲且試驗後須滿足第 4 項之電氣性能						
5.3	Actuator strength 操作部強度	A static force of 10kgf being applied in the direction of push for 15 seconds. 軸端方向引張 10kgf 15 秒鐘。	Shall be free from pronounced wobble, deformation and Mechanical abnormalities 不能有顯著的鬆動、彎曲及機械異常現象發生						
5.4	Soldering 焊 錫 吸 附 性	Temperature of solder 焊錫溫度：260±5℃ Duration of dipping 浸泡時間 3±0.5 seconds	More than 75% of the dipped part shall be covered by solder 浸泡部分須附著 75%以上						
5.5	Soldering heat resistance 耐 焊 錫 性	Temperature and duration of dipping 焊錫溫度和浸入時間 <table><tr><td></td><td>Temperature 溫度 ( °C )</td><td>Time ( sec ) 時間 ( 秒 )</td></tr><tr><td>Terminal of lead wiring 接線端子</td><td>350±10</td><td>3<sup>+1</sup><sub>-0</sub></td></tr></table>		Temperature 溫度 ( °C )	Time ( sec ) 時間 ( 秒 )	Terminal of lead wiring 接線端子	350±10	3 <sup>+1</sup> <sub>-0</sub>	No abnormalities shall be observed in appearance and operation. The electrical performance of the above clauss4 shall be assured 外觀無顯著之變形及動作無異常且滿足第四項之電氣性能
	Temperature 溫度 ( °C )	Time ( sec ) 時間 ( 秒 )							
Terminal of lead wiring 接線端子	350±10	3 <sup>+1</sup> <sub>-0</sub>							

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### 6.Durability 耐久性能

	Property 項 目	Test Conditions 試 驗 條 件	Performance 判定標準
6.1	Operating life ( without load ) 無負荷壽命	10,000 cycle operations at a rate of 15~18 cycle / minute without load 在無負載下連續動作 10,000 次(動作速度 15~18 次/分)	Contact resistance (4-1) : Max 70mΩ Insulation resistance (4-2) : More than 100MΩ
6.2	Operating life ( with load ) 負荷壽命	10,000 cycle operations at a rate of 15~18 cycle / minute with a load of 0.15A 12V DC DC 12V 0.15A(阻抗負載)下連續動作 10,000 次(動作速度 15~18 次/分)	Withstanding voltage (4-3) : 500V AC 1 minute not breaking insulation. Operating force (5-1) : Within +10, -30% of specifications. There shall be no defects in appearance or in the mechanical functions. 接觸阻抗(4-1 項) : 70mΩ 以下 絕緣阻抗(4-2 項) : 100MΩ 以上 耐電壓(4-3 項) : AC 500V 1 分鐘絕緣不得破壞。 動作力(5-項) : 規定值的+10, -30% 以內。外觀、構造無異常現象

### 7.Weather-proof 耐候性

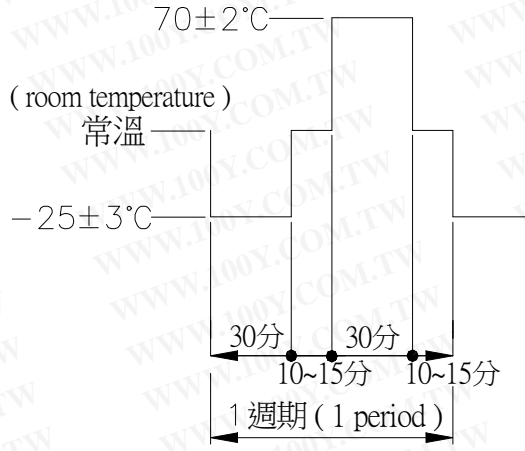
7.1	Cold proof 耐寒性	Switch for testing being kept in the conditions at -20±2°C in temperature for 96 hours, and in a normal ambient condition for one hour, then to be measured within one hour. Drop of water being taken away. -20±2°C 放置 96 小時試驗後，置於常溫常溼中 1 小時，除去水滴後，在 1 小時內測定之	Contact resistance (4-1) : Max 70 mΩ Insulation resistance (4-2) : More than 100 MΩ Withstanding voltage (4-3) : 500V AC 1 minute not
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Property 項目	Test Conditions 試驗條件	Performance 判定標準
7.2 Hot proof 耐熱性	Switch for testing being kept in the conditions at $85\pm 2^{\circ}\text{C}$ in temperature for 96 hours, and in a normal ambient condition for one hour, then to be measured within one hour. 85±2℃ 放置 96 小時試驗後，置於常溫常溼中 1 小時，在 1 小時內測定之	breaking insulation. Operating force (5-1) : Within +10, -30% of specifications. There shall be no defects in appearance or in the mechanical functions. 接觸阻抗(4-1 項) : 70mΩ 以下 絕緣阻抗(4-2 項) : 100MΩ 以上
7.3 Resistance to humidity 耐濕性	Switch for testing being kept in the conditions at $40\pm 2^{\circ}\text{C}$ in temperature 90~95% RH for 96 hours and in a normal ambient condition for one hour then to be measured within one hour. Drop of water being taken away. 在溫度 40±2℃ 放置，相對溼度 90~95% 放置 96 小時試驗後，置於常溫常溼中 1 小時，除去水滴後，在 1 小時內測定之	耐電壓(4-3 項) : AC 500V 1 分鐘絕緣不得破壞。 動作力(5-1 項) : 規定值的+10, -30%以內。 外觀、構造無異常現象。
7.4 Change of temperature 溫度循環試驗	After 5 cycles of following conditions, the switch shall be allowed to stand under room temperature and humidity conditions for 1 hour and measurement shall be made within 1 hour after that. Water drops shall be removed. 以下記條件作 5 個週期的試驗後放置 1 小時以內測試之，但是水珠必須去除 	Contact resistance (4-1) : Max 70 mΩ Insulation resistance (4-2) : More than 100 MΩ Resistance to humidity : More than 10 MΩ Withstanding voltage (4-3) : 500V AC 1 minute not breaking insulation. Operating force (5-1) : Within +10, -30% of specifications. There shall be no defects in appearance or in the mechanical functions. 接觸阻抗(4-1 項) : 70mΩ 以下 絕緣阻抗(4-2 項) : 100MΩ 以上 (但耐濕性試驗為 10MΩ 以上) 耐電壓(4-3 項) : AC 500V 1 分鐘絕緣不得破壞。 動作力(5-1 項) : 規定值的+10, -30%以內。 外觀、構造無異常現象。

### Precaution on operation:

#### 使用上注意事項:

- ◎In case that DC voltage is constantly applied on the switch:

In that condition the switch may be damaged and degenerated on account of irregular migration of silver portion.

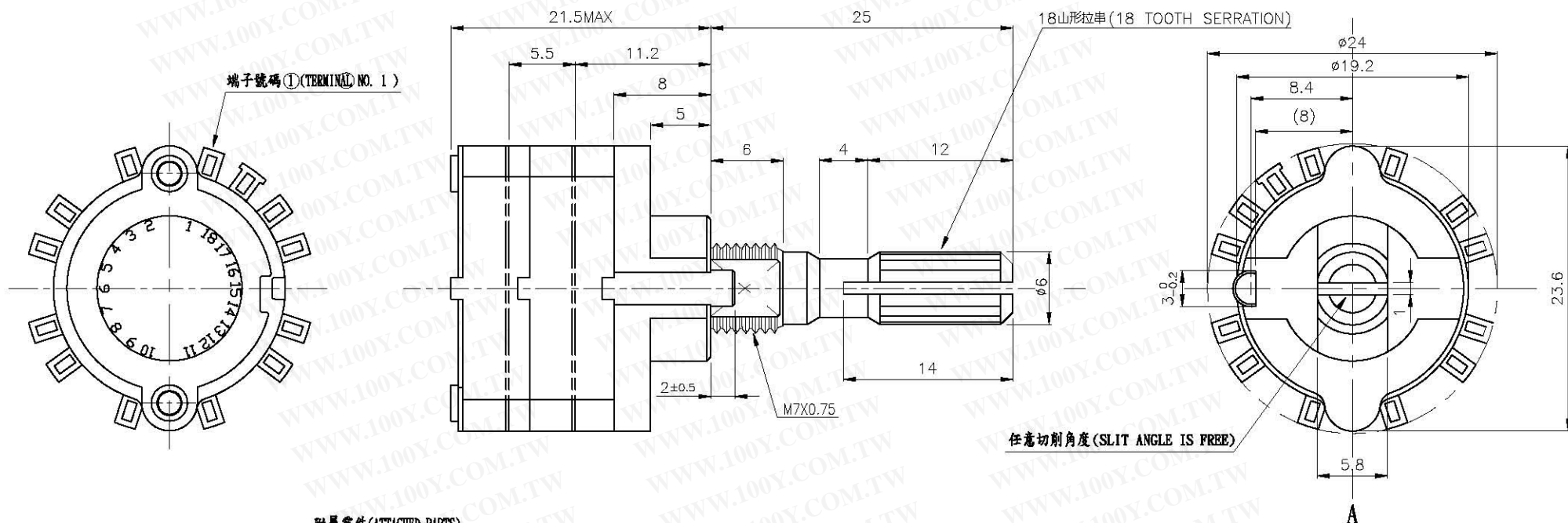
避免直流電持續加於開關上而產生銀移行，造成開關損壞劣化

- ◎Load of solder:

The terminals may wobble, be damaged in appearance, and be degenerated in the electrical performances when they are soldered and then added to extra load in some conditions.

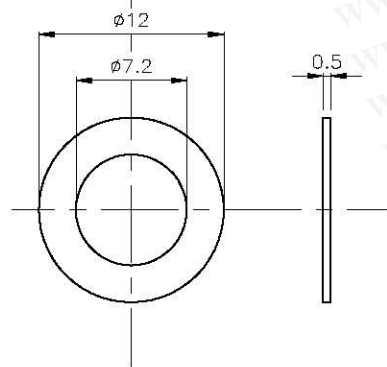
端子銲接時負荷：端子銲接時若施加外力易產生變形、間隙以及電氣性能劣化等現象請注意

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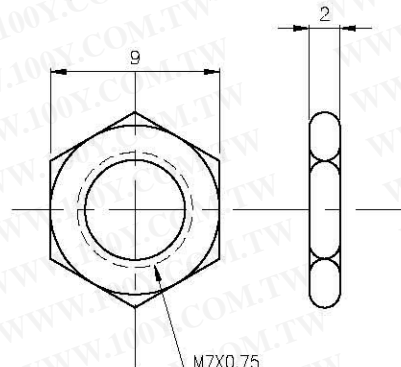


附屬零件 (ATTACHED PARTS)

平墊圈1個 (WASHER 1 PCS)



螺母1個 (NUT 1 PCS)

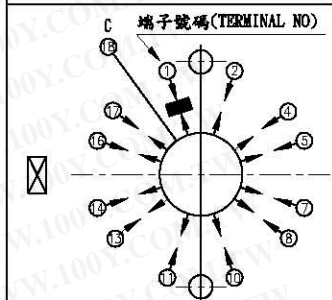


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迴路構成 (CIRCUIT DIAGRAM)

2 段 (2 CIRCUIT)

12 接點 (12 POSITIONS)



1 回路 (1 POLE)

## 註記: (NOTES)

- 迴轉轉矩為0.7±0.3Kgf.cm (OPERATING FORCE: 0.7±0.3Kgf.cm)
- 使用製品規格書SRRN-006 (PRODUCT SPECIFICATIONS NO. SRRN-006)
- 圖面所示之軸係反時鐘迴轉到底之位置 (SWITCH IS SHOWN IN FULL C.C.W POSITION)
- 切換時間性: 非短路型 (CHANGEOVER TIMING NON-SHORTING)
- 切換角度30° (STEP ANGLE: 30°)
- 拉串谷位置須在A-A'線上 (SERRATIONS VALLEY: ON THE LINE A-A')

## 變更說明:

Non Level-1/ RoHS  
Controlled Substance

零件號碼	名稱	材料	規格	處理	備考
TOLERANCES UNLESS OTHERWISE SPECIFIED					
BASIC DIMENSIONS TOLERANCES					
UP TO 10 (10 以下)					
ABOVE 10 TO 100 (10-100)					
ABOVE 100 (100 以上)					
ANGULAR DIMENSIONS (角度)					

零件號碼	名稱	材料	規格	處理	備考
三角法	單位	比例 2			
承認	校對	設計			
KSD 2016.08.09	KSD 2016.08.09	KSD 2016.08.09			
圖名: SRRN組立圖					
圖號: SRRN2C1N24					