

Rotary Switch

6-position Vertical Type

SRRN Series

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
 Http://www.100y.com.tw



Lead wiring compatible switch.



Features

- Excellent operating feel and environmentally friendly.

Applications

- For electronic devices, measuring devices, and control devices
- For audio systems

Typical Specifications

Items		Specifications
Rating (max.)/(min.) (Resistive load)		0.15A 12V DC/50 μ A 3V DC
Contact resistance (Initial/After operating life)		50m Ω max./100m Ω max.
Rotational torque		70 \pm 30mN·m
Operating life	Without load	10,000cycles
	With load	10,000cycles (0.15A 12V DC)

Product Line

Number of wafers	Poles	Positions	Changeover angle	Changeover timing	Actuator configuration	Actuator length (mm)	Minimum packing unit (pcs.)	Product No.
1	2	5	30 \pm 3°	Non shorting	Round	20	100	SRRN151800
		6			Flat	15		SRRN152000
					18-tooth serration	20		SRRN161100
	3	4			Round			SRRN142100
	4	3			18-tooth serration	15		SRRN134300

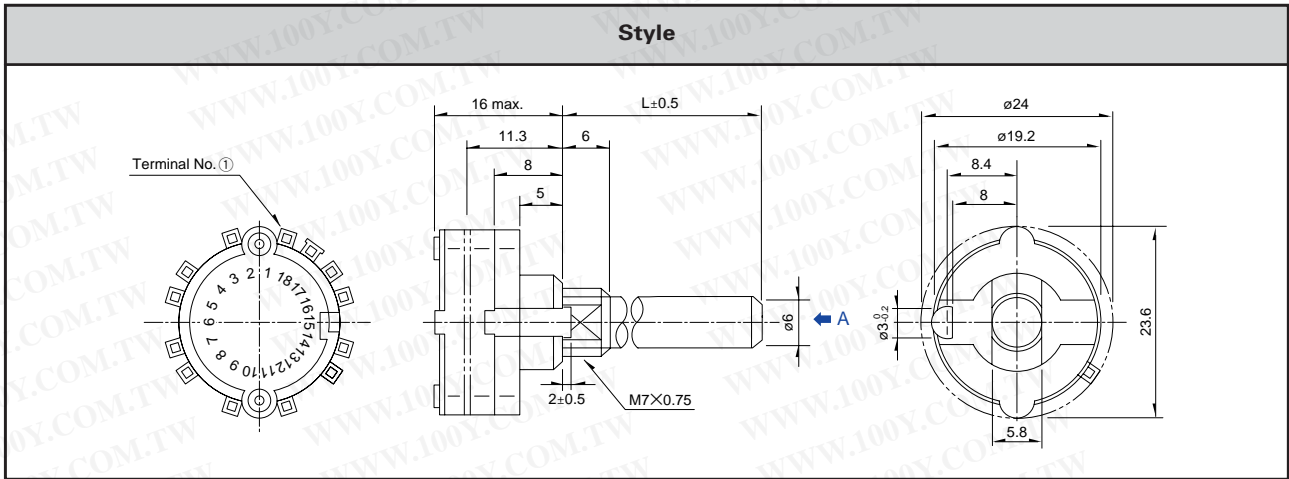
Note

1. Products other than those listed in the above chart are also available. Please contact us for details.
2. All the axis are cutting shafts.

Refer to P.175 for product specifications.
 Refer to P.173 for shaft configurations.
 Refer to P.175 for attached parts.

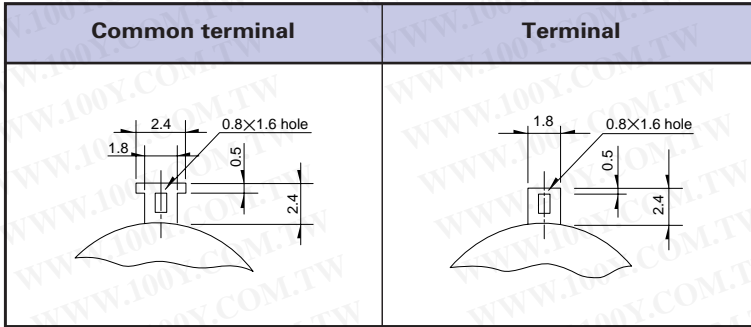
Dimensions

Unit:mm



Terminal Configuration

Unit:mm



Standard Circuit Diagram (Standard Poles Per Step)

Number of poles	2	3	4
Circuit diagram			
Dummy terminals	2-positions	17 16 14 13 8 7 5 4	17 16 11 10 5 4
	3-positions	17 16 14 8 7 5	17 11 5
	4-positions	17 16 8 7	—
	5-positions	17 8	—
	6-positions	—	—

Note

The mark in the above table indicate a stopper with the shaft turned fully counterclockwise when viewed from direction A of the diagrams.

Refer to P.173 for shaft configurations.

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Product Specifications

Items	Series	SRBM		SRRN		
		Rotary	Pulse			
Detector	Operating temperature range		-40°C to +85°C	-10°C to +60°C		
Push	Rating (max.) (Resistive load)		0.1A 16V DC	0.15A 12V DC		
Slide	Initial contact resistance		50mΩ max.			
Rotary	Electrical performance	Insulation resistance		100MΩ min. 100V DC	100MΩ min. 500V DC	
		Voltage proof		100V AC for 1minute	500V AC for 1minute	
		Terminal strength		5N for 1minute		
Encoders	Power	Actuator strength	Rotational direction	0.5N·m	——	1N·m
Dual-in-line Package Type			Push direction	100N		
Multi Control Devices	Mechanical performance	Wobble of actuator		Measuring position from mounting surface	Shaft wobble (max. value)	Applicable mounting dimension
TACT Switch™				10mm	0.17mm	15mm
Custom-Products				15mm	0.25mm	20mm
		Load at the tip of shaft : 5N				
		Vibration				
	Resistance to soldering heat	Manual soldering		350±10°C, 3 ⁺ 1s		
		Dip soldering		260±3°C 5s max.	260±5°C, 10±1s	
		Reflow soldering		——		
Durability	Operating life without load		10,000cycles 100mΩ max.	30,000cycles 100mΩ max.	10,000cycles 70mΩ max.	
	Operating life with load Load : (at rated load)		10,000cycles 150mΩ max.		10,000cycles 100mΩ max.	
Environmental performance	Cold		-20±2°C for 96h			
	Dry heat		85±2°C for 96h			
	Damp heat		40±2°C, 90 to 95%RH for 96h			

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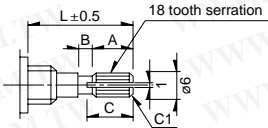
Shaft Configurations

18-tooth Serration Shaft

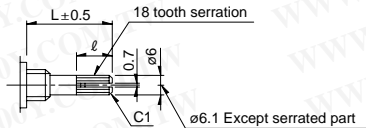
The shaft shows the position in which it is turned fully counterclockwise.

Unit:mm

①Cutting Shaft



②Die Casting Shaft



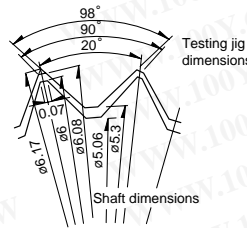
Shaft length L	A	B	C
15	6	1	7
20	10	2	11

Unit:mm

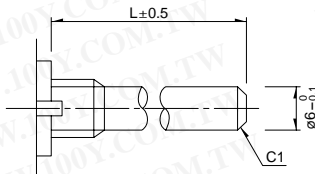
Shaft length L	ℓ
15	8
20	12

Details About Serration

- The mold dimensions of standard serration and the dimensions of test jigs are as shown in the figure at left.
- Position of the serration bottom
When the shaft is turned fully counterclockwise, the position of the serration bottom is on the AA line.
- Slitting angle
The slitting angle (position) is not specified.

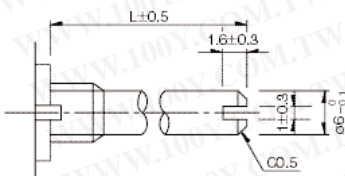


Round Shaft



Round Shaft with Groove

The shaft shows the position in which it is turned fully counterclockwise.



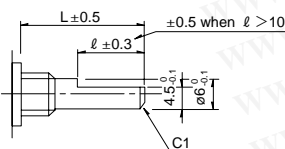
Shaft flatten angle	Shaft Configuration Type
	S26

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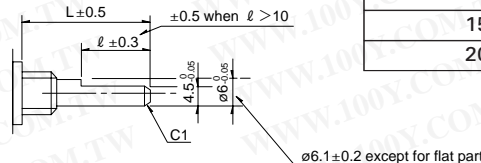
Flat Shaft

The shaft shows the position in which it is turned fully counterclockwise.

Cutting Shaft



Die Casting Shaft



Unit:mm

Shaft length L	ℓ
15	7
20	12

Shaft flatten angle	Shaft Configuration Type
	F00

Note

SRBM Series are based on (printed terminal direction). SRRM, SRRN, SRBV Series are based on (panel lug).

Detector
 Push
 Slide
 Rotary
 Encoders
 Power
 Dual-in-line Package Type
 Multi Control Devices
 TACT Switch™
 Custom-Products

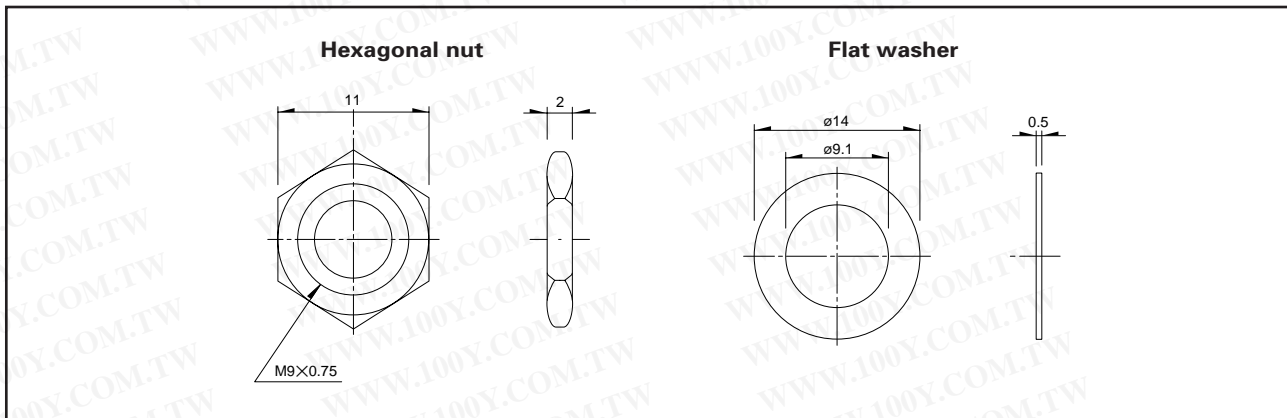
Attached Parts

The following parts are included with the product.

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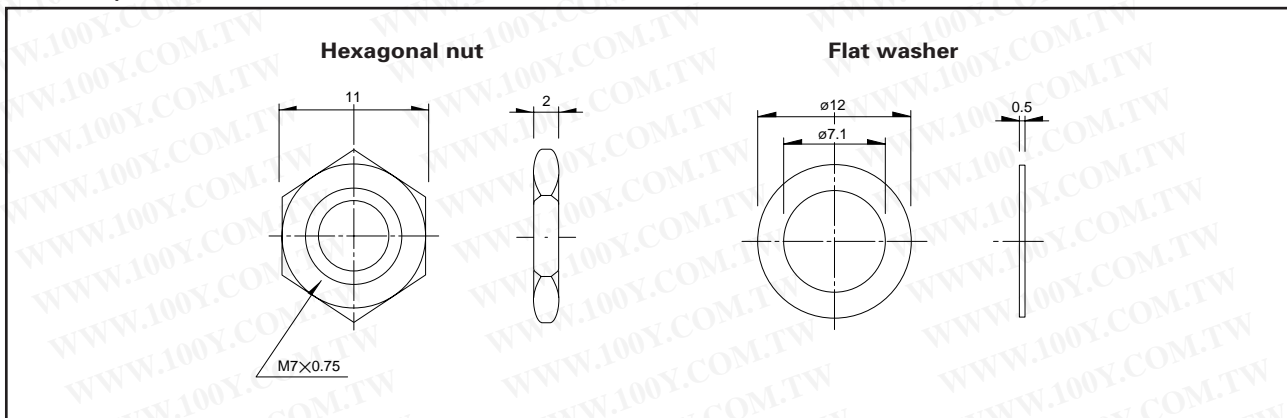
SRRM, SRBV

Unit:mm



SRBM, SRRN

Unit:mm

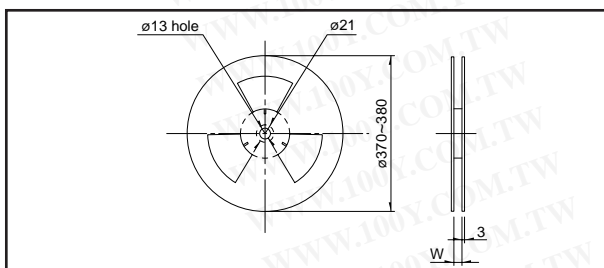


Taping Specifications

Taping Packaging

Reel Size

Unit:mm



Series	Number of packages (pcs.)			Reel width W (mm)	Tape width (mm)
	1 reel	1 case/domestic	1 case/export packing		
SRBQ	1,200	2,400	4,800	24.4	24
SRBD	Length of operation section	1.0mm	1,400	25.4	
		1.7mm	1,200		

Note

Please place purchase orders for taping products per minimum package units (1 reel or a case).

SRRN SWITCHES SPECIFICATIONS

SRRN 開關製品規格書

DOCUMENT NO.	Rev	PAGE
SRRZ-005	1.3	(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。

1.2 Practical Temperature Range 使用溫度範圍：-10~+60°C

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

試驗狀態：若無特別規定限制，則以溫度 5~35°C，相對濕度 45~85%，氣壓 860~1060 mbar 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，相對濕度 65±5%，氣壓 860~1060 mbar）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 failures.

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

2.2 Construction and dimensions: Per individual product drawing.

構造、尺寸：依組立圖

3、Rated 額定：DC 12V 0.15A (Resistance load)(阻抗負載)

4、Electrical performance 電氣性能

NO.	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±200Hz, Max. 20mV DC, Max. 50mA or 5V DC, 1A by voltage drop method. 1 kHz±200Hz 電壓 20mV 以下，電流 50mA 以下測定或 DC 5V 1A 電壓降下法測定	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 frame for 1 minute±5seconds. 以 DC 500V 之電壓加於端子相互間及端子與接地外框間 1分±5秒測定之	MIN. 100MΩ 100MΩ 以上
4.3	Withstand voltage 耐電壓	500V AC(50~60Hz)being applied between all the terminals and between the terminals and frame for 1 minute. 以 AC 500V (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. 依各別組立圖

5、Mechanical performance 機械功能

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 load 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、破壞及絕緣破壞之現象，但端子可以彎曲、且試驗後須滿足第4項之電氣性能

					NOTE	APPD	CHKD	DSDG
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NO.	Property 項目	Test conditions 試驗條件	Performance 判定基準																		
5.3	Actuator strength 操作部強度	(1) A static force of 10kg.cm being applied in the direction of operation (Stopper-side) for 15 seconds. 軸之迴轉方向兩端加 10kg.cm 迴轉轉矩 15 秒 (2) A static load of 10kgf shall be applied in the push direction of shaft for 15 seconds. 在操作部的推擠方向 10kgf 的靜負荷 15 秒。	There Shall not be any troubles as deviation and bending. 不能有顯著的鬆動、彎曲及機械異常現象發生																		
5.4	Wobble of actuator 操作部的振動	Run-out (P-P) shall be measured by applying a static load of 500gf in the vertical direction of operation at the tip of actuator. 於操作部垂直方向加500gf之靜負荷測其最大振幅。 (單位:mm) 測定位置由固定面算起	<table border="1"> <thead> <tr> <th>測定位置</th> <th>軸振幅 (P-P)</th> <th>軸長</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>0.17</td> <td>15</td> </tr> <tr> <td>15</td> <td>0.25</td> <td>20</td> </tr> <tr> <td>20</td> <td>0.35</td> <td>25</td> </tr> <tr> <td>25</td> <td>0.42</td> <td>30</td> </tr> <tr> <td>30</td> <td>0.5</td> <td>≥35</td> </tr> </tbody> </table>	測定位置	軸振幅 (P-P)	軸長	10	0.17	15	15	0.25	20	20	0.35	25	25	0.42	30	30	0.5	≥35
測定位置	軸振幅 (P-P)	軸長																			
10	0.17	15																			
15	0.25	20																			
20	0.35	25																			
25	0.42	30																			
30	0.5	≥35																			
5.5	Soldering 銲錫附著性	Switch shall be checked after following test. 依下列條件試驗後測定之 (1) Solder 銲錫性: H63A(JIS Z 3282) (2) Flux: Rosin flux(JIS K 5902)having a nominal composition of 25%solids by weight of water white rosin in methyl alcohol(JIS K 1501)solution. 助銲劑: 松香之木精溶液濃度以重量比松香約佔25% (3) soldering temperature: 260±5°C 銲錫溫度: 260±5°C Immersing time: 3±0.5 seconds 浸入時間: 3±0.5 秒 Flux immersing time shall be 5~10 seconds in normal temperature. 但浸有 FLUX 在常溫下 5~10 秒 (4) Immersion depth: Immersion depth shall be at wiring portion of lead wire for lead wire terminal. 浸入深度: 接線端子:須浸達接線部	More than 75% of the dipped part shall be covered by solder. 浸泡部分須附著75%以上																		
5.6	Soldering heat resistance 銲錫耐熱性	Switch shall be measured after following test. 依下列條件試驗後測定之 Temperature and duration of dipping 銲錫溫度和浸入時間 <table border="1"> <thead> <tr> <th></th> <th>Temperature 溫度 (C°)</th> <th>Time 時間(sec)</th> </tr> </thead> <tbody> <tr> <td>Lead wiring 接線端子</td> <td>350±10</td> <td>3⁺¹₋₀</td> </tr> </tbody> </table>		Temperature 溫度 (C°)	Time 時間(sec)	Lead wiring 接線端子	350±10	3 ⁺¹ ₋₀	No abnormalities shall be recognized in appearance. The electrical performance requirements specified in 4 shall be satisfied. 外觀無顯著之變形及動作無異常且滿足第4項之電氣性能												
	Temperature 溫度 (C°)	Time 時間(sec)																			
Lead wiring 接線端子	350±10	3 ⁺¹ ₋₀																			

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6、Durability 耐久性能

NO.	Property 項目	Test conditions 試驗條件	Performance 判定基準
6.1	Operating life Without load 無負荷壽命	10,000 cycles 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 500V DC
6.2	Operating life With load 負荷壽命	10,000 cycles operations at a rate of 15-18 cycle/minute with a load of DC 12V 0.15A. DC 12V 0.15A (阻抗負載)下連續動作 10,000 次(動作速度 15~18 次/分)。	Withstand voltage (4.3): 500V AC 1 minute. Not breaking insulation. Operating Force (5.1): Within +10% -30% of specification. There shall be no defects in appearance or in the mechanical functions. 接觸阻抗(4.1項):70 mΩ以下 100mΩ以下(阻抗負載下) 絕緣阻抗(4.2項):以DC 500V測定 100 MΩ以上 耐電壓(4.3項):以AC 500V測定 1分鐘絕緣不得破壞 迴轉轉矩(5.1項):規格值的+10%-30%以內,外觀、構造無異常現象

7、Weather-proof 耐候性

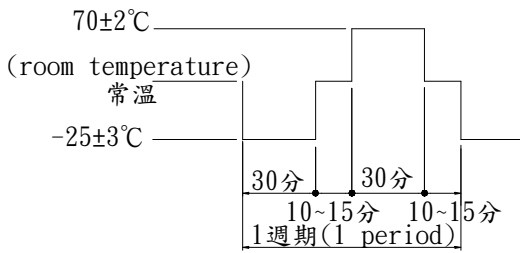
7.1	Cold proof 耐寒性	Switch for testing being kept in the conditions at $-20\pm 2^{\circ}\text{C}$ in temperature for 96 hours, and in a normal ambient condition for one hour, then to be measured within one hour. Drops of water being taken away. $-20\pm 2^{\circ}\text{C}$ 放置 96 小時試驗後,置於常溫常濕中 1 小時,除去水滴後,在 1 小時內測定之	Contact resistance (4.1): Max. 70mΩ Insulation resistance (4.2): More than 100MΩ (Resistance to humidity More than 10MΩ) Withstand voltage (4.3): 500V AC 1 minute. Not breaking insulation. Operating Force (5.1): Within +10% -30% of specification. There shall be no defects in appearance or in the mechanical functions.
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. $85\pm 2^{\circ}\text{C}$ 放置 96 小時試驗後,置於常溫常濕中 1 小時,在 1 小時內測定之	接觸阻抗(4.1項):70 mΩ以下 絕緣阻抗(4.2項): 100 MΩ以上 (但耐濕性實驗為 10 MΩ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 and 90~95%RH for 96 hours, and in a normal ambient condition for one hour, then to be measured within one hour. Drops of water being taken away. 在溫度 $40\pm 2^{\circ}\text{C}$ 相對溼度 90~95%放置 96 小時試驗後,置於常溫常濕中 1 小時除去水滴後,在 1 小時以內測定之	耐電壓(4.3項):以AC 500V測定 1分鐘絕緣不得破壞 迴轉轉矩(5.1項):規格值的+10%-30%以內 外觀、構造無異常現象

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NO.	Property 項目	Test conditions 試驗條件	Performance 判定基準
7.4	Temperature cycling 溫度循環試驗	<p>After 5 cycles of following conditions, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour and measurement shall be made within 1 hour after that. Water drops shall be removed. 以下記條件做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</p> 	<p>Contact resistance (4.1): Max. 70mΩ Insulation resistance (4.2): More than 100MΩ Withstand voltage (4.3): 500V AC 1 minute. Not breaking insulation. Operating Force (5.1): Within +10% -30% of specification. There shall be no defects in appearance or in the mechanical functions. 接觸阻抗(4.1項):70 mΩ以下 絕緣阻抗(4.2項): 100 MΩ以上 耐電壓(4.3項): 以 AC 500V 測定 1 分鐘絕緣不得破壞 迴轉轉矩(5.1項): 規格值的 +10%-30%以內, 外觀、構造無異常現象</p>

Precaution on operation:

使用上注意事項:

- (1) 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
- (2) 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
- (3) Please have the products keep in close status and the storage time in 90 days guaranty after delivering the goods at most.
為了避免保管場所的環境引起端子變色，未到使用之前請勿拆封，SW的保存期限出貨後3個月內。

					NOTE	APPD	CHKD	DSGD
						鍾景浩 2020/07/09	楊嘉峰 2020/07/09	洪翠卿 2020/07/09
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DOCUMENT NO.	Rev	PAGE
SRRZ-005	1.3	(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。

1.2 Practical Temperature Range 使用溫度範圍：-10~+60°C

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

試驗狀態：若無特別規定限制，則以溫度 5~35°C，相對濕度 45~85%，氣壓 860~1060 mbar 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，相對濕度 65±5%，氣壓 860~1060 mbar）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 failures.

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

2.2 Construction and dimensions: Per individual product drawing.

構造、尺寸：依組立圖

3、Rated 額定：DC 12V 0.15A (Resistance load)(阻抗負載)

4、Electrical performance 電氣性能

NO.	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±200Hz, Max. 20mV DC, Max. 50mA or 5V DC, 1A by voltage drop method. 1 kHz±200Hz 電壓 20mV 以下，電流 50mA 以下測定或 DC 5V 1A 電壓降下法測定	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 frame for 1 minute±5seconds. 以 DC 500V 之電壓加於端子相互間及端子與接地外框間 1分±5秒測定之	MIN. 100MΩ 100MΩ 以上
4.3	Withstand voltage 耐電壓	500V AC(50~60Hz)being applied between all the terminals and between the terminals and frame for 1 minute. 以 AC 500V (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. 依各別組立圖

5、Mechanical performance 機械功能

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 load 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、破壞及絕緣破壞之現象，但端子可以彎曲、且試驗後須滿足第4項之電氣性能

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NO.	Property 項目	Test conditions 試驗條件	Performance 判定基準																		
5.3	Actuator strength 操作部強度	(1) A static force of 10kg.cm being applied in the direction of operation (Stopper-side) for 15 seconds. 軸之迴轉方向兩端加 10kg.cm 迴轉轉矩 15 秒 (2) A static load of 10kgf shall be applied in the push direction of shaft for 15 seconds. 在操作部的推擠方向 10kgf 的靜負荷 15 秒。	There Shall not be any troubles as deviation and bending. 不能有顯著的鬆動、彎曲及機械異常現象發生																		
5.4	Wobble of actuator 操作部的振動	Run-out (P-P) shall be measured by applying a static load of 500gf in the vertical direction of operation at the tip of actuator. 於操作部垂直方向加 500gf 之靜負荷測其最大振幅。 (單位:mm) 測定位置由固定面算起	<table border="1"> <thead> <tr> <th>測定位置</th> <th>軸振幅 (P-P)</th> <th>軸長</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>0.17</td> <td>15</td> </tr> <tr> <td>15</td> <td>0.25</td> <td>20</td> </tr> <tr> <td>20</td> <td>0.35</td> <td>25</td> </tr> <tr> <td>25</td> <td>0.42</td> <td>30</td> </tr> <tr> <td>30</td> <td>0.5</td> <td>≥35</td> </tr> </tbody> </table>	測定位置	軸振幅 (P-P)	軸長	10	0.17	15	15	0.25	20	20	0.35	25	25	0.42	30	30	0.5	≥35
測定位置	軸振幅 (P-P)	軸長																			
10	0.17	15																			
15	0.25	20																			
20	0.35	25																			
25	0.42	30																			
30	0.5	≥35																			
5.5	Soldering 銲錫附著性	Switch shall be checked after following test. 依下列條件試驗後測定之 (1) Solder 銲錫性: H63A(JIS Z 3282) (2) Flux: Rosin flux(JIS K 5902) having a nominal composition of 25% solids by weight of water white rosin in methyl alcohol(JIS K 1501) solution. 助銲劑: 松香之木精溶液濃度以重量比松香約佔 25% (3) soldering temperature: 260±5°C 銲錫溫度: 260±5°C Immersing time: 3±0.5 seconds 浸入時間: 3±0.5 秒 Flux immersing time shall be 5~10 seconds in normal temperature. 但浸有 FLUX 在常溫下 5~10 秒 (4) Immersion depth: Immersion depth shall be at wiring portion of lead wire for lead wire terminal. 浸入深度: 接線端子: 須浸達接線部	More than 75% of the dipped part shall be covered by solder. 浸泡部分須附著 75% 以上																		
5.6	Soldering heat resistance 銲錫耐熱性	Switch shall be measured after following test. 依下列條件試驗後測定之 Temperature and duration of dipping 銲錫溫度和浸入時間 <table border="1"> <thead> <tr> <th></th> <th>Temperature 溫度 (C°)</th> <th>Time 時間(sec)</th> </tr> </thead> <tbody> <tr> <td>Lead wiring 接線端子</td> <td>350±10</td> <td>3⁺¹₋₀</td> </tr> </tbody> </table>		Temperature 溫度 (C°)	Time 時間(sec)	Lead wiring 接線端子	350±10	3 ⁺¹ ₋₀	No abnormalities shall be recognized in appearance. The electrical performance requirements specified in 4 shall be satisfied. 外觀無顯著之變形及動作無異常且滿足第 4 項之電氣性能												
	Temperature 溫度 (C°)	Time 時間(sec)																			
Lead wiring 接線端子	350±10	3 ⁺¹ ₋₀																			

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6、Durability 耐久性能

NO.	Property 項目	Test conditions 試驗條件	Performance 判定基準
6.1	Operating life Without load 無負荷壽命	10,000 cycles 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 500V DC
6.2	Operating life With load 負荷壽命	10,000 cycles operations at a rate of 15-18 cycle/minute with a load of DC 12V 0.15A. DC 12V 0.15A (阻抗負載)下連續動作 10,000 次(動作速度 15~18 次/分)。	Withstand voltage (4.3): 500V AC 1 minute. Not breaking insulation. Operating Force (5.1): Within +10% -30% of specification. There shall be no defects in appearance or in the mechanical functions. 接觸阻抗(4.1項):70 mΩ以下 100mΩ以下(阻抗負載下) 絕緣阻抗(4.2項):以DC 500V測定 100 MΩ以上 耐電壓(4.3項):以AC 500V測定 1分鐘絕緣不得破壞 迴轉轉矩(5.1項):規格值的+10%-30%以內,外觀、構造無異常現象

7、Weather-proof 耐候性

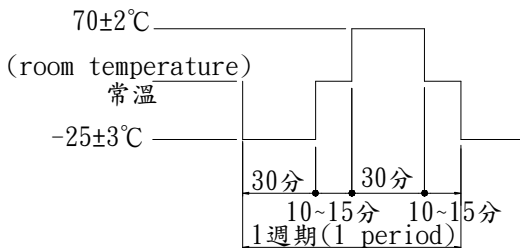
7.1	Cold proof 耐寒性	Switch for testing being kept in the conditions at $-20\pm 2^{\circ}\text{C}$ in temperature for 96 hours, and in a normal ambient condition for one hour, then to be measured within one hour. Drops of water being taken away. $-20\pm 2^{\circ}\text{C}$ 放置 96 小時試驗後,置於常溫常濕中 1 小時,除去水滴後,在 1 小時內測定之	Contact resistance (4.1): Max. 70mΩ Insulation resistance (4.2): More than 100MΩ (Resistance to humidity More than 10MΩ) Withstand voltage (4.3): 500V AC 1 minute. Not breaking insulation. Operating Force (5.1): Within +10% -30% of specification. There shall be no defects in appearance or in the mechanical functions.
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. $85\pm 2^{\circ}\text{C}$ 放置 96 小時試驗後,置於常溫常濕中 1 小時,在 1 小時內測定之	接觸阻抗(4.1項):70 mΩ以下 絕緣阻抗(4.2項): 100 MΩ以上 (但耐濕性實驗為 10 MΩ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 and 90~95%RH for 96 hours, and in a normal ambient condition for one hour, then to be measured within one hour. Drops of water being taken away. 在溫度 $40\pm 2^{\circ}\text{C}$ 相對溼度 90~95%放置 96 小時試驗後,置於常溫常濕中 1 小時除去水滴後,在 1 小時以內測定之	耐電壓(4.3項):以AC 500V測定 1分鐘絕緣不得破壞 迴轉轉矩(5.1項):規格值的+10%-30%以內 外觀、構造無異常現象

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NO.	Property 項目	Test conditions 試驗條件	Performance 判定基準
7.4	Temperature cycling 溫度循環試驗	<p>After 5 cycles of following conditions, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour and measurement shall be made within 1 hour after that. Water drops shall be removed.</p> <p>以下記條件做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</p> 	<p>Contact resistance (4.1): Max. 70mΩ Insulation resistance (4.2): More than 100MΩ Withstand voltage (4.3): 500V AC 1 minute. Not breaking insulation. Operating Force (5.1): Within +10% -30% of specification. There shall be no defects in appearance or in the mechanical functions.</p> <p>接觸阻抗(4.1項):70 mΩ以下 絕緣阻抗(4.2項): 100 MΩ以上 耐電壓(4.3項): 以 AC 500V 測定 1 分鐘絕緣不得破壞 迴轉轉矩(5.1項): 規格值的 +10%-30%以內, 外觀、構造無異常現象</p>

Precaution on operation:

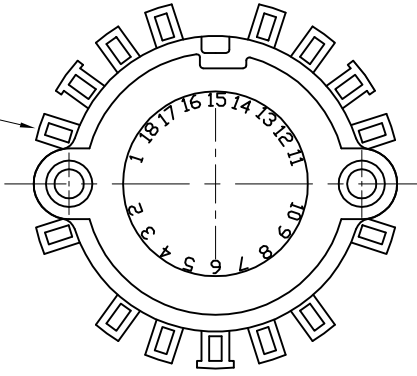
使用上注意事項:

- (1) 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
- (2) 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
- (3) Please have the products keep in close status and the storage time in 90 days guaranty after delivering the goods at most.
為了避免保管場所的環境引起端子變色，未到使用之前請勿拆封，SW的保存期限出貨後3個月內。

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SYMB	DATE	APPD	CHKD	DSGD				

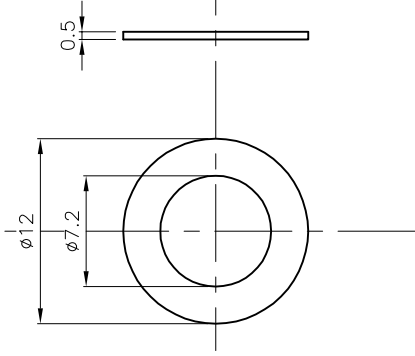
■ 一般使用 □ 內部使用 □ 機密

端子號碼 (TERMINAL NO.)

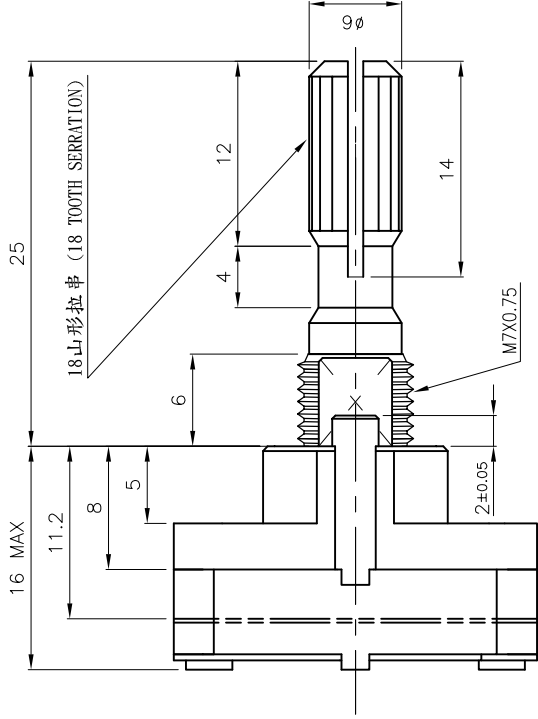
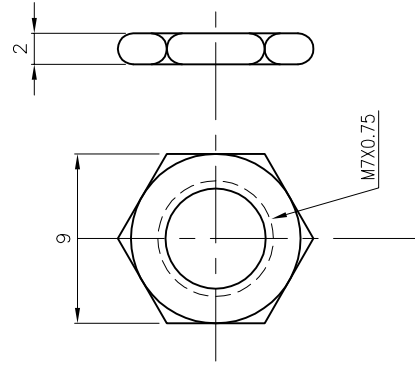


附屬零件 (ATTACHED PARTS)

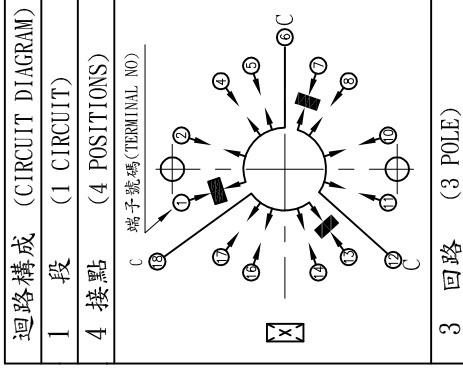
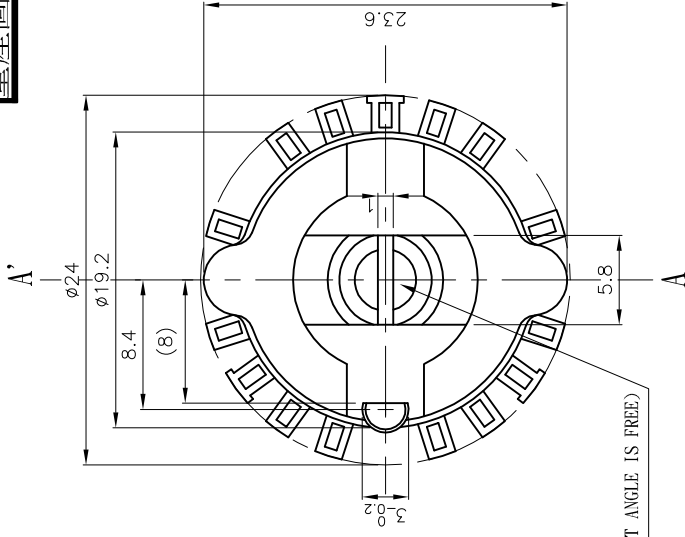
平墊圈 (WASHER 1 PCS)



螺母 (NUT 1 PCS)



任意切削角度 (SLIT ANGLE IS FREE)



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 SRRZ-005 (PRODUCT SPECIFICATIONS NO. SRRZ-005)
- 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°)
- 拉串各位置須在 A-A' 線上 (SERRATIONS VALLEY: ON THE LINE A-A')

變更說明:

Non Level-1/ RoHS Controlled Substance	未指定尺寸材料之公差
TOLERANCES UNLESS OTHERWISE SPECIFIED	BASIC DIMENSIONS TOLERANCES
UP TO 10 (10 REF)	±0.3
ABOVE 10 TO 100 (10-100)	±0.5
ABOVE 100 (100 REF)	±0.8
ANGULAR DIMENSIONS (角度)	±3'

零件號碼	名稱	材料	規格	處理	備考
		單位 mm	比例 2/1		
	三角法承認	KSD 2016.08.09 機械規格	設計		
					圖名: SRRN 組立圖
					圖號: SRRN143N50