

# 东莞飞金电子科技有限公司

## SPECIFICATION

### 產品規格書

客戶名稱:

編號:	F-J08K-01-011
日期:	2013/05/10

序號	機種名稱	客戶料號
1	FJ08K-S1 B10K	
2		
3		
4		
5		

業務	廠務	品保	工程	客戶承認		

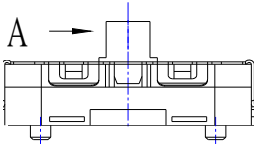
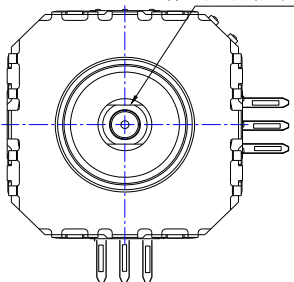




5	Contact Noise 接觸雜音 (CRV)	/	By the test length of less than 90% carbon film length。 測試長度小於碳膜長度的 90%。
		/	
6	Voltage Divider Error 分壓誤差值	/	Voltage divider error is defined the ratio of the voltage terminals 1-2 to terminals 1-3 after the slide bars rested. 5V D.C. shall be applied to the terminals between land 3 and then voltage divider error shall be measured with the slide bars operation on the line X-X and Y-Y. (Terminal 1-2/Terminal 1-3×100%) 分壓誤差值是滑柄自由復歸后端子 1-2 與端子 1-3 電壓比例. 將 5V D.C 電壓加在端子 1-3 之間, 分壓誤差值在滑柄運作於 X-X 和 Y-Y 方向到底復歸后測試. (端子 1-2/端子 1-3 ×100%)
7	Insulation resistance 絕緣阻抗值	More than 100 MΩ 100 MΩ 以上	Apply DC250V 1 Minute to the individual terminals and frame 金屬支架與端子間加 DC250V 電壓 1 分鐘
8	Withstand voltage 耐電壓特性	Without arcing or breakdown 無損壞或弧光	Apply one minute of 250VAC to the individual terminals and frame 在特定端子與支架間加 AC250V 電壓 1 分鐘.

## 二、MECHANICAL CHARACTERISTICS 機構特性

序號 NO.	項目 ITEM	性能 PERFORMANCE	測試條件 TEST METHODS AND REFERENCE
1	Figure of the slid bars operation 滑柄動作形式	Slides on the 2D flat 平面移動的形式	/
2	The stopper strength of the slid bars 滑柄止動強度	More than 3.0Kgf 3 seconds min 大於 3.0Kgf, 至少 3 秒鐘	Apply side force on the slid bars perpendicular to the slid bars' s axial direction. 垂直於滑柄的力作用於滑柄上.
3	Rotational Stopper Strength of the slid bars 滑柄旋轉止動強度	/	/

4	The wobble angle of the slid bars 滑柄虛位角度	/	/
5	Pull strength of slid bars 滑柄拉拔強度	More than 3.0 Kgf 3 seconds min 大於 3.0Kgf, 至少 3 秒鐘	Apply specified pull force on the slid bars upward. 作用於滑柄上, 沿滑柄方向向上.
6	Push Strength of slid bars 滑柄推壓強度	More than 3.0 Kgf 3 seconds min 大於 3.0Kgf, 至少 3 秒鐘	Apply specified push force on the slid bars downward. 作用於滑柄上, 沿滑柄方向向下.
7	Operation travel of the slide bars 滑柄使用有效行程	2 mm	The travel of the slide bars pushed to any direction on the 2D flat. 滑柄在 2D 平面在推向任何方向的行程
8	Operating force of slide bars 滑柄作用力	120 ± 50gf	The push force is to made the slide bars to be slided by A direction. 沿 A 方向使滑柄滑動的推力. 
9	Accuracy of reset position of slide bars 滑柄復歸精度	±0.2 mm	Measure the distance between the center of the slide bars and the center after the slide bars pushed to the any direction on the 2D flat and resets. 測量滑柄的中心和滑柄在 2D 平面推向任何方向後復歸的中心的距離. Push the slide bars to any direction 推動滑柄向任何方向 

10	Terminal strength 端子強度	Without damage or excessive looseness of terminals or poor contact. 端子無毀損或過度鬆動, 或接觸不良。	A force of 3N (306gf) being applied in one direction at the tip of the terminal for one minute and only one time to each terminal. 以 3N(306gf) 的靜力以單一方向對每一個端子施力 1 分鐘, 此測試每端子只做一次。
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### 三. ENDURANCE CHARACTERISTICS 耐久性能 (Single test of item 單一測試項目)

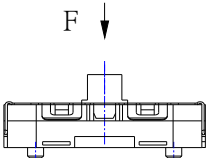
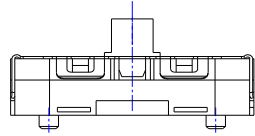
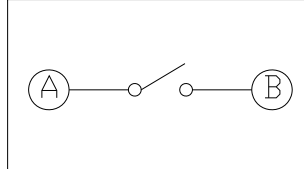
序號 NO.	項目 ITEM	性能 PERFORMANCE	測試條件 TEST CONDITIONS
1	Free falling 自由落下試驗	No damage and lever deformation, but deformations of terminals and molded parts are allowed. 無不良產生, 端子變形除外。	Height: 75cm Number of falls: 3 times 從高度為 75 釐米落下測試 3 次後
2	Dry heat 耐熱性	Variation of total resistance should be within $\begin{matrix} +5\% \\ -30\% \end{matrix}$ . To be operated mechanically. 全阻值變化要在 $\begin{matrix} +5\% \\ -30\% \end{matrix}$ 以內, 機械方面能動作。	Temperature: $+80 \pm 2^{\circ}\text{C}$ Time: 96 hours The controller shall be subjected to standard atmospheric conditions for 2 hours after which measurement shall be made. 溫度在 $80 \pm 2^{\circ}\text{C}$ 放置 96 小時, 2 小時后正常狀態下測試。
3	Cold 耐寒性	The total resistance change should be within $\pm 20\%$ . To be operated mechanically. 全阻值變化要在 $\pm 20\%$ 以內, 機械方面能動作。	Temperature: $-30 \pm 2^{\circ}\text{C}$ Time: 96 hours Surface moisture shall be removed, and then the controller shall be subjected to standard atmospheric conditions for 2 hours after which measurement shall be made. 溫度在 $-30 \pm 2^{\circ}\text{C}$ 放置 96 小時, 表面水份攝取后 2 小時正常狀態下測試。

4	Damp heat 耐濕性	Insulation resistance: more than 10M $\Omega$ with 250V insulation resistance tester. The total resistance change should be within $\pm 20\%$ . To be operated mechanically. 用 250V 絕緣測試機測試, 絕緣阻抗 10M $\Omega$ 以上, 全阻值變化要在 $\pm 20\%$ 以內, 機械方面能動作。	Temperature: $+60 \pm 2^\circ\text{C}$ Humidity: 90~95%RH Time: 96 hours Surface moisture shall be subjected to standard atmospheric conditions for 2 hours after which measurement shall be made.  溫度在 $60 \pm 2^\circ\text{C}$ , 濕度: 90~95%RH 放置 96 小時, 表面水份攝取后 2 小時正常狀態下測試。
5	Temperature cycling test 溫度循環測試	The total resistance change should be within $\pm 20\%$ . To be operated mechanically. 全阻值變化要在 $\pm 20\%$ 以內, 機械方面能動作。	Low temperature : $-10 \pm 3^\circ\text{C}$ 30 minutes High temperature: $+60 \pm 2^\circ\text{C}$ 30 minutes Number of cycles: 5 Surface moisture shall be removed, and then the controller shall be subjected to standard atmospheric conditions for 2 hours after which measurement shall be made. 在低溫為 $-10 \pm 3^\circ\text{C}$ 放置 30 分鐘, 高溫 $60 \pm 2^\circ\text{C}$ 放置 30 分鐘, 測試 5 次. 表面水份攝取后 2 小時后正常狀態下測試。
6	Resistance to soldering 焊錫性	Not less than 3/4 of the surface dipped shall be covered with new solder. 浸錫部分表面最少 3/4 被新錫覆蓋。	Temperature of solder: $235 \pm 5^\circ\text{C}$ , Dipping duration: $3 \pm 0.5\text{S}$ . 焊錫溫度: $235 \pm 5^\circ\text{C}$ , 浸錫時間: $3 \pm 0.5$ 秒。
7	Resistance to soldering heat 焊錫耐熱性	Variation of total resistance shall be within $\pm 5\%$ , and terminals shall not work loose to injure electric contact, after test. 全阻值變化 $\pm 5\%$ 以內, 測試後無端子鬆動, 不會損壞電氣接點。	Solder dip: 浸焊 Preheating condition: Surface temperature of the substrate shall be settled within $100^\circ\text{C}$ in one min. 預熱: 基板表面溫度 $100^\circ\text{C}$ 以下, 1 分鐘內。 Solder temperature $260 \pm 5^\circ\text{C}$ for 5 sec. 焊錫溫度 $260 \pm 5^\circ\text{C}$ , 5 秒。  Manual Soldering: Less than $300^\circ\text{C}$ and quicker than 3 seconds. 手鐸: $300^\circ\text{C}$ 以下, 3 秒以內

8	Number of cycles 耐久次數值	Total resistance $\cong$ Initial value $\pm 20\%$ . No mechanical malfunction. 全阻值變化 $\cong$ 初始值 $\pm 20\%$ . 機械方面能動作.	500,000 Cycles min
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#### 四、SWITCH CHARACTERISTICS (FOR WITH-SWITCH TYPE)

##### 開關規格 (適用於帶開關機種)

序號 NO.	項目 ITEM	性能 PERFORMANCE	測試條件 TEST CONDITIONS
1	Operating force 作動力	■ 480 $\pm 150$ gf □ 700 $\pm 150$ gf	A static load shall be applied to the tip of actuator in operating direction 靜力從作動方向施加於滑柄頂端 
2	Travel 移動量	0.25+0.2/-0.1mm	Put the switch lever upward, apply 2 times of the static operating force over the lever's axial direction of the lever, measure the variance of the switch stroke. 將開關操作部(搖杆)置於靜止位置,並在操作柄中央施加兩倍於作動力之靜負荷測量柄被壓到不動時之移動距離。 
3	Push strength 按壓強度	No mechanical and electrical malfunction. 不得有電氣及機構上之異常現象.	Put the switch lever upward; apply 3kgf of the static load over the vertical direction of the lever for 60 seconds. 將開關之操作部(搖杆)置於垂直方向,並沿操作方向加 3kgf 之靜負荷 60 秒.
4	Circuit diagram 電路圖		/



5	Contact resistance 接觸阻抗	Less than 300 mΩ 低於 300 mΩ	Apply 2 times of the operating force of the static load on the vertical direction of the lever, measure the resistance by using the Contact Resistance Tester with 1KHZ, 20mV, 5~50mA of current. 將兩倍於作動力之靜負荷加於操作柄之中央以(1KHZ, 20mV, 5~50mA)微電流接觸阻抗計測定.
6	Insulation resistance 絕緣阻抗	More than 100 MΩ 100 MΩ 以上	A voltage of DC100V is applied between terminals. 以 DC100V 之電壓加於端子間測定.
7	Withstand voltage 耐電壓	There shall be no damage, arc or dielectric breakdown. 無絕緣破壞之現象	A voltage of AC 250V (50~60HZ) shall be applied for 1 min between terminals. 以 AC250V (50~60HZ) 電壓施加於端子間 1 分鐘.
8	Rated power 額定功率	12 V DC 50 mA	Within 70°C 小於 70°C
9	Number of cycles 開關耐久次數	Contact resistance 500mΩ Max, No mechanical malfunction. 接觸阻抗最大 500mΩ, 機械方面能動作.	<input checked="" type="checkbox"/> 100,000 Cycles min <input type="checkbox"/> Other ___ / ___ Cycles min

## 五、General 一般事項

序號 NO.	項 目 ITEM	
1	Unless otherwise specified, test and measurement should be carried out in following condition: 如無特殊要求, 試驗與測試將按以下條件進行:	
	Ambient temperature 溫度	5°C to 35°C
	Relative humidity 相對濕	25% to 85%
	Air pressure 氣壓	86 KPa to 106 KPa
2	If there is any doubt arise from judgement, test shall be conducted at the following conditions: 遇有疑慮時, 則測試應在以下狀態下進行:	
	Ambient temperature 溫度	20°C ±2°C
	Relative humidity 相對濕度	60% to 70%

	Air pressure 氣壓	86 KPa to 106 KPa
3	Operating temperature range 使用溫度範圍	-10°C to +55°C
4	Storage temperature range 儲存溫度範圍	-30°C to +80°C

**六、Appearance, Style and Dimensions ,Type of actuating ,Contact arrangement  
外觀、形狀和尺寸、動作形式、回路形式**

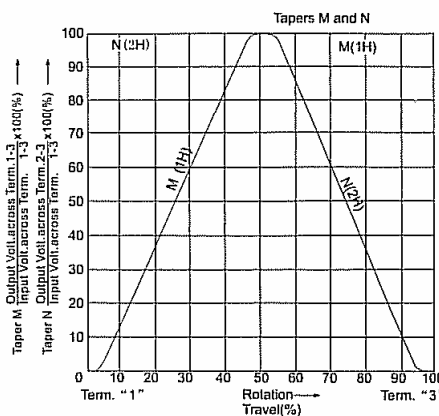
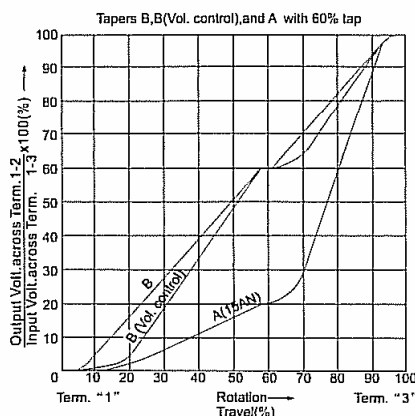
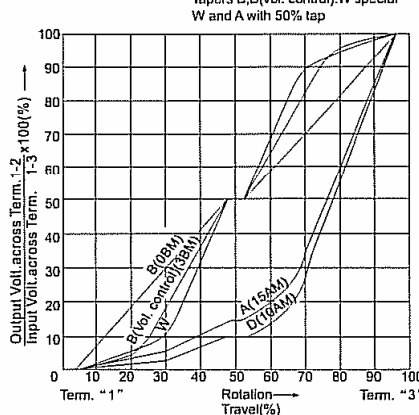
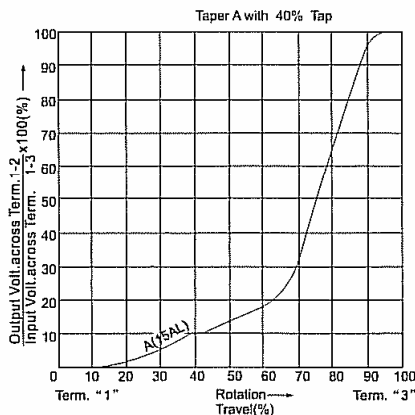
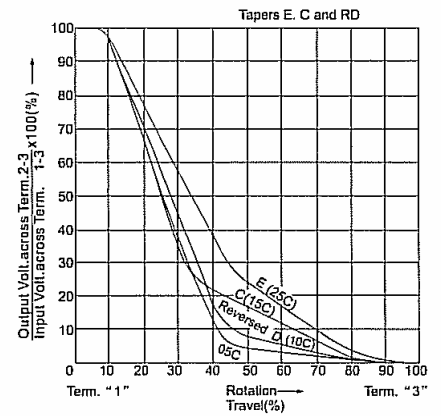
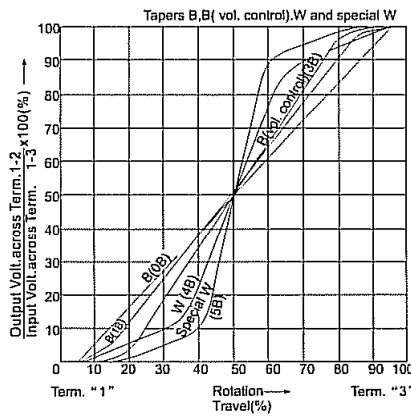
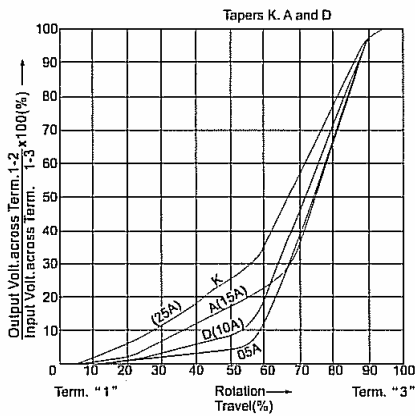
序號 NO	項 目 ITEM	
1	Appearance 外觀	F-J08K(S) shall be no defects that affect the serviceability of the product F-J08K(S) 不可有影響產品服務性的暇疵存在
2	Style and Dimensions 形狀和尺寸	Refer to the assembly drawings 參考成品圖
3	Type of actuating 動作形式	Put feedback & Slides on the 2D flat 按壓回彈和在 2D 平面滑動
4	Contact arrangement 回路形式	Refer to the assembly drawings 參考成品圖
<b>Approved 核 准</b>		<b>Q. I. Department 審 查</b>
		<b>Design dept. 經 辦 者</b>

# SPECIFICATIONS

## Electrical characteristics

### • Resistance Taper Characteristics

Resistance Taper Characteristic	Test Position (%)	$\frac{V_{1-2}}{V_{1-3}} \times 100\%$ (%)	$\frac{V_{2-3}}{V_{1-3}} \times 100\%$ (%)
<b>A</b>	50	10~25	—
<b>B</b>	50	40~60	—
<b>C</b>	50(started from Term.3)	—	10~25
<b>D</b>	50	6~15	—
<b>E</b>	50	—	18~34
<b>W</b>	30 (±5 degree)	5~15	—
	50	40~60	—
	70 (±5 degree)	85~95	—



NOTE: Resistance characteristic of curve N is plotted With respect to terminal "3"