11Ø 雙連回轉式可變電阻器製品規格書

11Ø DUAL–UNIT ROTARY POTENTIOMETERS SPECIFICATIONS

1. 一般事項 General

1.1 適用範圍: 此規範適用于電子機器之可變電阻器.

Application: This specification is applied to potentiometers used for electronic equipment.

1.2 使用溫度範圍 Operating temperature: −10～+55℃

1.3 試驗狀態: 若無特別規定限制, 則以溫度5~35℃, 相對濕度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℃, 相對濕度65 ±5%,氣壓860~1060mbar)為準測定.

Test conditions : the standard test conditions shall be 5~35℃ in temperature ,45~85%RH and 860~1060mbar in atmospheric , should any doubt arise in judgement , tests shall be conducted at 20±2℃ , 65±5%RH and 860~1060mbar.

2. 構造、尺寸 Construction and dimensions 依組立圖 Refer to attached drawing

3. 電氣性能 Electrical characteristics

NO.	項 目 Item	試 驗 條 件 Test conditions	規 格 Specifications
3–1	全 阻 抗 值 Total resistance	軸置于任意角度, 測定端子1-3間的阻抗值 Measurement shall be made by the resistance between terminal 1 and 3 with shaft setted at free angle.	公稱全阻抗值±20% Nominal total resistance ± 20%
3–2	額 定 電 力 Power rating	端子1和3間所能連續負荷之最大電力 Power rating is based on continuous full load operation at the maximum voltage between terminal 1 and terminal 3.	0.05W
3–3	額 定 電 壓 Rated voltage	額定電壓 Rated voltage $E=\sqrt{PR}$ (V) 額定電力 P: Power rating (W) 公稱全阻抗值 R: Nominal total resistance (Ω) 當額定電壓超過最高使用電壓的時候, 最高使用電壓即為額定電壓. When the rated voltage exceeds the maximum operating voltage , the maximum operating voltage shall be the rated voltage.	

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NO.	項 目 Item	試 驗 條 件 Test conditions			規 格 Specifications
3-4	最高使用電壓 Max Operating Voltage	本制品為交流電專用 This potentiometer is designed for A.C voltage only.			A.C. 50V
3–5	阻抗變化特性 Taper	電壓法測定 *記號表示自第3端子測起 Measurement shall be made by the resistance law method . * With respect to terminal 3			詳細曲線請參照變化特性一覽表 Detailing resistance taper to see resistance taper list
		變化特性 taper	測定位置 test point	V1-2 / V1-3	
		Z	(R1)180°	∨	40~60%
			(R2)180°	∨	85~100%
3–6	耐 電 壓 Voltage proof	以300V之交流電壓,測試1分鐘 . 測試位置: 端子和固定板間 Applying 300V A.C measure for 1 min . Applied position : Between terminal and attaching plate .			不可有損傷, 電弧, 絕緣, 破壞 Without damage to parts arcing or breakdown .
3–7	絕 緣 阻 抗 Insulation resistance	施加 250V之直流電壓,1分鐘後測試. 測試位置: 端子和固定板間 Test voltage : 250V D.C measure after 1 min . Test position : Between terminal and attaching plate			100MΩ 以上 100MΩ MIN.

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4. 機械性能: Mechanical characteristics

NO.	項 目 Item	試 驗 條 件 Test conditions	規 格 Specifications
4–1	全回轉角度 Total rotational angle		360°
4–2	回轉轉矩 Operating torque	回轉速度60° /1秒,但指針之瞬間下滑不計 Rotational speed 60° /1 sec. but torque meter indicator dropping in an instant shall be accepted.	20 ~ 250 gf-cm
4–3	軸承螺絲固定強度 Bushing mount strength		10Kgf-cm以上, 在12Kgf-cm以下使用10Kgf-cm MIN . Don t over 12Kgf-cm when operating
4–4	軸之張力壓力強度 Shaft push-pull strength	在軸之方向加壓力或張力之靜負荷 10Kgf,10 秒 Push and pull static load 10Kgf shall be applied in the shaft direction for 10 sec.	電氣性能須滿足 Electrical characteristics shall be satisfied.
4–5	焊錫耐熱 Resistance to soldering heat	※DIP銲錫條件 DIP Condition of soldering 1.浸漬焊錫處理時,請確保在下列條件下作業 Soldering shall be certifide with following condition. 預熱溫度 Preheating temperature: (印刷基板之RV固定溫度）100℃以下,2分鐘以內.（Surface temperature of mounting side） 100℃MAX. Within 2 MIN. 焊錫溫度 Solder temperature: 260℃±5℃, 5秒以內 260℃±5℃, Within 5 sec. 手焊溫度 Manual solder temperature: 350℃±5℃, 3秒以內 350℃±5℃, Within 3 sec. 2.以上工程1回通過即可. Please use the above process only one times.	全阻抗值變化在初期的±5%以內,端子不可有接觸不良或明顯松動 Change in total resistance is relative to the value before test ±5%. Without excessive looseness of terminals and failure contact.

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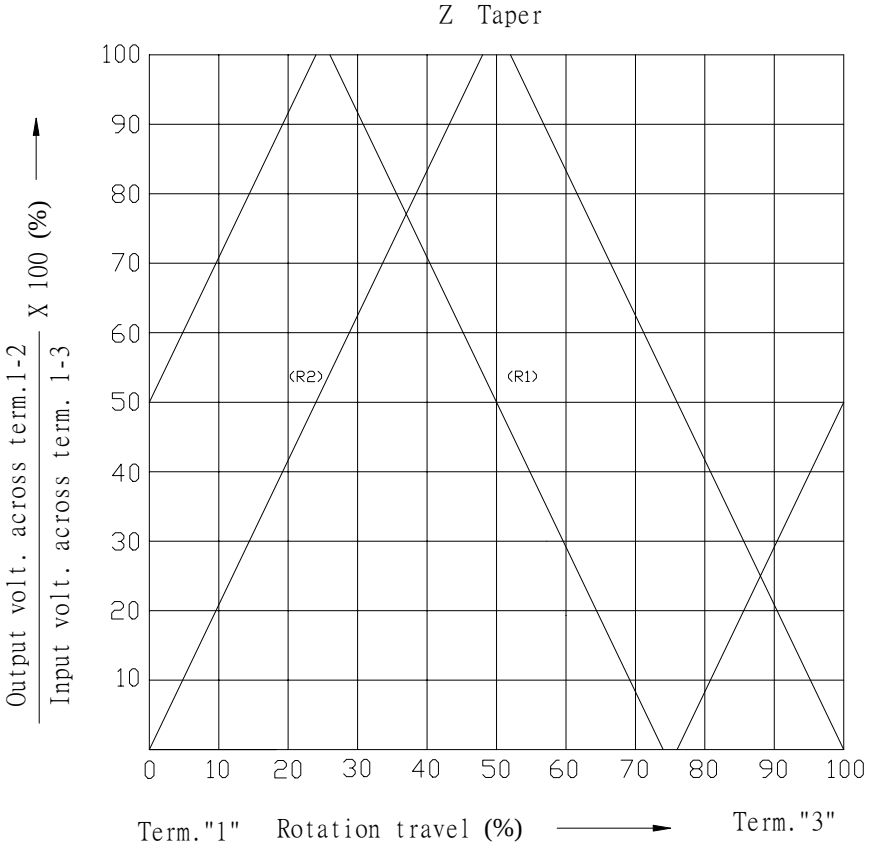
4–6	軸 松 動 Shaft wobble	在固定狀態下,距離固定面30mm位置施加500gf-cm之力矩. (軸長未滿30mm時,依比例計算) The potentiometer is fixed condition A torsion moment of 500gf-cm shall be applied at the point of 30mm from the mounting surface. (If the shaft length is less than 30mm the vaiue shall be calculated proportionally.)	

軸 受 長 Bushing length	軸 松 動 Wobbie of shaft
5	0.6mm p-p 以下(MAX)
7	0.5mm p-p 以下(MAX)
10以上 (MIN)	0.4mm p-p 以下(MAX)

5. 耐久性能 Endurance

NO.	項 目 Item	試驗條件 Test conditions	規 格 Specifications
5–1	回 轉 壽 命 Rotational life	無負荷狀態,軸以每小時 600~1000迴轉的速度下,持續進行 15,000迴轉。 (1迴轉為 360°往返各一次) The shaft of encoder shall be rotated to 15,000 cycles at a speed of 500 cycles per hour without electrical load, after which measurement shall be made.	1. 全阻抗值的變化為初期值的±15%以內. 2. 旋轉雜音 : 250mV以下 3. 其它需滿足 (3項) (4項) 1. Change in total resistance is relative to the value before test ±15%. 2. Rotational oise : 250mV MAX 3. Clause (3)(4) shall be satisfied

RoHS Compliance


Z Taper
100
90
80
70
60
50
40
30
20
10
0
10
20
30
40
50
60
70
80
90
100
(R2)
(R1)
Output volt. across term.1-2 / Input volt. across term. 1-3 X 100 (%)
Term."1"
Rotation travel (%)
Term."3"