12Ø 雙連回轉式可變電阻器製品規格書

12Ø 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	軸置于端子1或3終端, 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 terminal 1 or 3.	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.	

					APPD.	CHKD.	DSGD.	DOCUMENT NO.:	
					周貴榮	王文娟	龔俊利	12P2VF-D - -001-6H	
								VERSION:	A
								PAGE:	1 OF 5
SYMB	DATE	APPD	CHKD	DSGD				DATE:	2005.3.26

12Ø 雙連回轉式可變電阻器製品規格書

12Ø DUAL–UNIT ROTARY POTENTIOMETERS SPECIFICATIONS

NO.	項 目 Item	試驗條件 Test conditions				規 格 Specifications
3–4	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	V2-3 / V1-3	
		10A	150°	∨	—	6~15%
		15A	150°	∨	—	10~25%
		25A	150°	∨	—	18~34%
		1B	150°	∨	—	40~60%
		2B	150°	∨	—	40~60%
		4B	90 ±5°	∨	—	5~15%
			150°	∨	—	40~60%
			210 ±5°	∨	—	85~95%
		*10C	150°	—	∨	6~15%
		*15C	150°	—	∨	10~25%
		*25C	150°	—	∨	18~34%
		M (R1)	75±5°	∨	—	40~60%
			150°	∨	—	98~100%
		*N (R2)	75±5°	—	∨	40~60%
			150°	—	∨	98~100%
3–5	殘留阻抗 Residual resistance	滑動子置于全回轉角度的終端時,端子1-2間、端子2-3間的阻抗值測定 . The resistances at each end of the mechanical rotation between terminal 1 and 2 , terminal 2 and 3 shall be measured .				
			公稱全阻抗值 (KΩ) Nominal total resistance (KΩ)			單位 : Ω Unit : Ω
			R ≦ 30			30以下 30 MAX.
			30 < R ≦ 1000			全阻抗值的0.1%以下 0.1% MAX of nominal Total resistance

					APPD.	CHKD.	DSGD.	DOCUMENT NO. :	
					周貴榮	王文娟	龔俊利	12P2VF-D - -001-6H	
								VERSION :	A
								PAGE :	2 OF 5
SYMB	DATE	APPD	CHKD	DSGD				DATE :	2005.3.26

12Ø 雙連回轉式可變電阻器製品規格書

12Ø DUAL–UNIT ROTARY POTENTIOMETERS SPECIFICATIONS

NO.	項 目 Item	試 驗 條 件 Test conditions	規 格 Specifications
3–6	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
3–7	旋 轉 雜 音 Rotation noise	端子1-3間印加直流電壓20V(額定電壓20V以下時,則印加此額定電壓),以30回/分的轉速所測定之雜音. Applying 20V D.C between the terminals 1 and 3 (When the rated voltage is small than the 20V D.C, it shall be applied the rated voltage) . And then the noise shall be measured by the specified speed 30 cycles / min .	100mV 以下 100mV MAX.
3–8	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.
3–9	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 .
3–10	連動誤差 Tracking error	在前、後的1-3端子間加1KHz, 2V的直流電壓,以前段為基準,1-2端子間的輸出.(15C,25C. 10C變化特性測2-3端子間的輸出). Applying 2V D.C (1KHz) across terminals 1and 3 of the front and rear section, output across terminals 1 and 2of the rear section of the front section output level, (taper 15C and 25C and 10C output across terminals 2 and 3).	
		變化特性 Taper / 測試範圍 Test sphere	
		15A, 2B, 15C, 10A, 25C, 25A, 10C, 4B (M, N)無規定 Not specified 1B / 回轉角150度位置 At center position	±2dB 以內 MAX

					APPD.	CHKD.	DSGD.	DOCUMENT NO. :	
					周貴榮	王文娟	龔俊利	12P2VF-D - -001-6H	
								VERSION :	A
								PAGE :	3 OF 5
SYMB	DATE	APPD	CHKD	DSGD				DATE :	2005.3.26

可 正 欣 有 限 公 司
TOP-UP INDUSTRY CORP.

12Ø 雙連回轉式可變電阻器製品規格書

12Ø DUAL–UNIT ROTARY POTENTIOMETERS SPECIFICATIONS

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		300 ± 5°
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 Standard atmospheric conditions, Rotational speed 60° /1 sec. but torque meter indicator dropping in an instant shall be accepted	30 ~ 200 gf-cm
4–3	軸擠壓引張強度 Shaft push - pull strength	在軸的擠壓和引張方向各施加8Kgf-cm 3 秒 Push and pull static load 8Kgf shall be applied in the shaft direction for 3 sec.	電氣性能須滿足 Electrical characteristics shall be satisfied.
4–4	軸回轉止動強度 Shaft end stop strength	在1端子側或3端子側施加回轉力矩 A torsion moment shall be applied at shaft in terminal 1 or terminal 3.	5Kgf-cm 以上 5Kgf-cm MIN.
4–5	軸之偏心 Eccentricity of shaft	對于固定基準之中心,軸根部之偏心. Against the center of the mounting position, the eccentricity of the root of shaft.	0.35mm 以下 0.35mm MAX.
4–6	軸 傾 斜 Shaft inclination	從固定面位置對中心之傾斜. Against the center of the mounting position.	0.35mm 以下 0.35mm MAX.
4–7	軸 松 動 Shaft wobble	在固定狀態, 軸前端加上500gf-cm之力矩 The potentiometer is fixed condition A torsion moment of 500gf-cm shall be applied at the end of shaft.	0.7×L / 20 mm p-p 以下 0.7×L / 20 mm p-p MAX.
4–8	軸橫擠壓強度 Shaft against side push strength	在固定狀態, 于軸垂直方向施加3Kgf-cm 3 秒鐘. The potentiometer is fixed condition A torsion moment of 3Kgf-cm shall be applied in a direction perpendicular to the axial direction for 3 sec.	電氣性能須滿足 Electrical characteristics shall be satisfied
4–9	焊錫耐熱性 Resistance to soldering heat	在300±5℃,3±0.5秒或260±5℃,5±0.5秒焊錫後于常溫常濕中放1小時後測定. Soldering at 300±5℃ for 3±0.5 sec. or 260±5℃ for 5±0.5 sec. Then the potentiometer shall be maintained at standard atmospheric for 1 hour after which measurement shall be made.	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.

					APPD.	CHKD.	DSGD.	DOCUMENT NO. :	
					周貴榮	王文娟	龔俊利	12P2VF-D - -001-6H	
								VERSION :	A
								PAGE :	4 OF 5
SYMB	DATE	APPD	CHKD	DSGD				DATE :	2005.3.26

12Ø 雙連回轉式可變電阻器製品規格書

12Ø DUAL–UNIT ROTARY POTENTIOMETERS SPECIFICATIONS

NO.	項 目 Item	試 驗 條 件 Test conditions	規 格 Specifications
4–10	掣子位置 Detent position		150±5°
4–11	掣子脫出轉矩 Dentent torque	回轉速度60°/1秒 (但4-10, 4-11僅適用於付掣子時) Rotational speed 60°/ sec. (4-10, 4-11 is uses for click only)	回轉轉矩+(30~300)gf-cm operating torque +(30~300) gf-cm

5 . 耐久性能 Endurance

5–1	回 轉 壽 命 Rotational life	無負荷狀態, 軸回轉速度600回/小時, 有效回轉角度的90%以上, 總次數15000回以上 . (但阻值5KΩ以下時,5000回轉以上) The moving contact ,without electrical load , shall be rotated form one end stop to the other end returned to its original position extend over 90% or more effective angle . Rotation speed : 600 cycle / hour . Total cycles : 15000 cycles . (But nominal total resistance under 5KΩ, the total cycles is 5000 cycles) .	1. 全阻抗值的變化為初期值的±15%以內 . 2. 旋轉雜音 : 150mV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. Noise : 150mV MAX 3. Clause (3)(4) shall be satisfied .

					APPD.	CHKD.	DSGD.	DOCUMENT NO. :	
					周貴榮	王文娟	龔俊利	12P2VF-D - -001-6H	
								VERSION :	A
								PAGE :	5 OF 5
SYMB	DATE	APPD	CHKD	DSGD				DATE :	2005.3.26