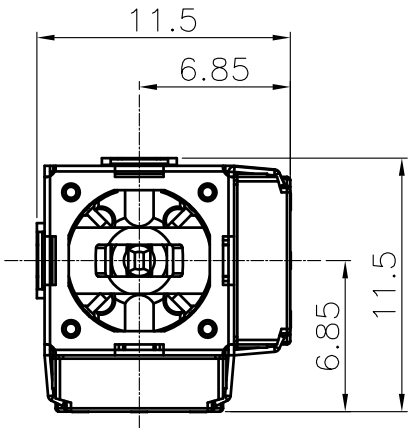
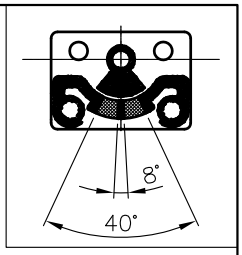
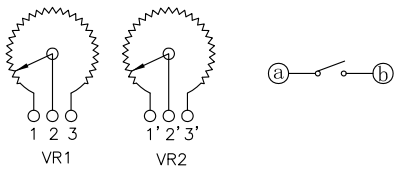
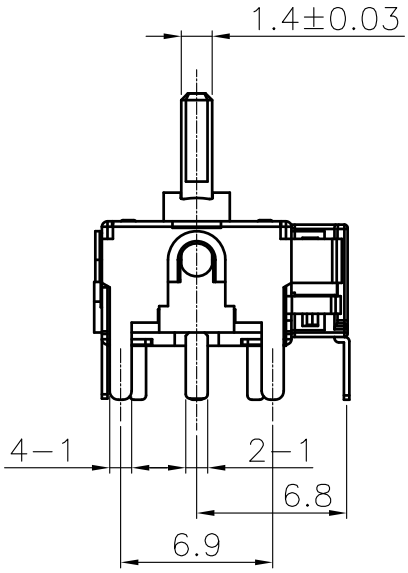
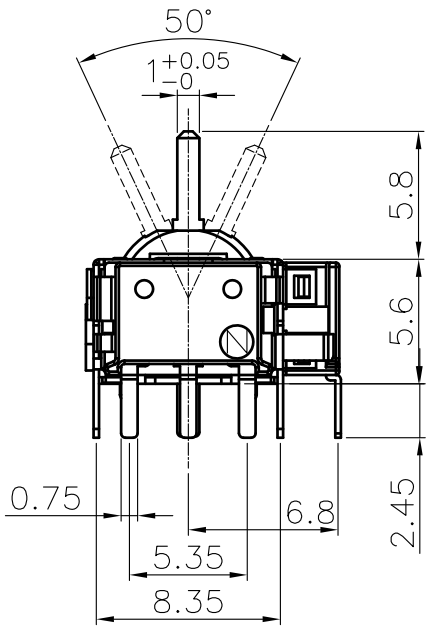


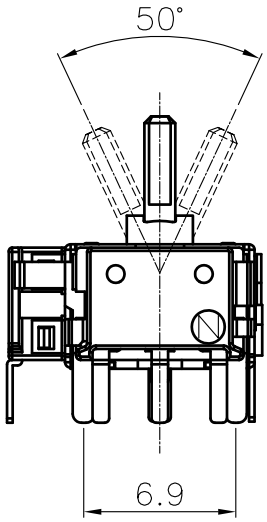


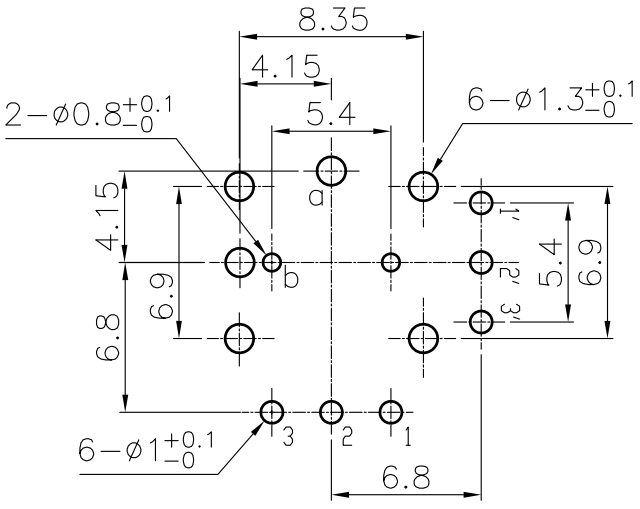


CIRCUIT









未指定容許±尺寸之公差	
<10	±0.3
10~100	±0.5
>100	±0.8
ANGLE	±2°

4			
3			
2			
1			
	ALTERATION	DATE	DESIGN

DRAWN	CHECKED	APPROVAL
张工 2025.12.09	宋工 2025.12.09	赵工 2025.12.09

深圳市亚特联科技有限公司
SHENZHEN YATELIAN TECHNOLOGY CO., LTD

UNIT	SCALE
MM	1/1

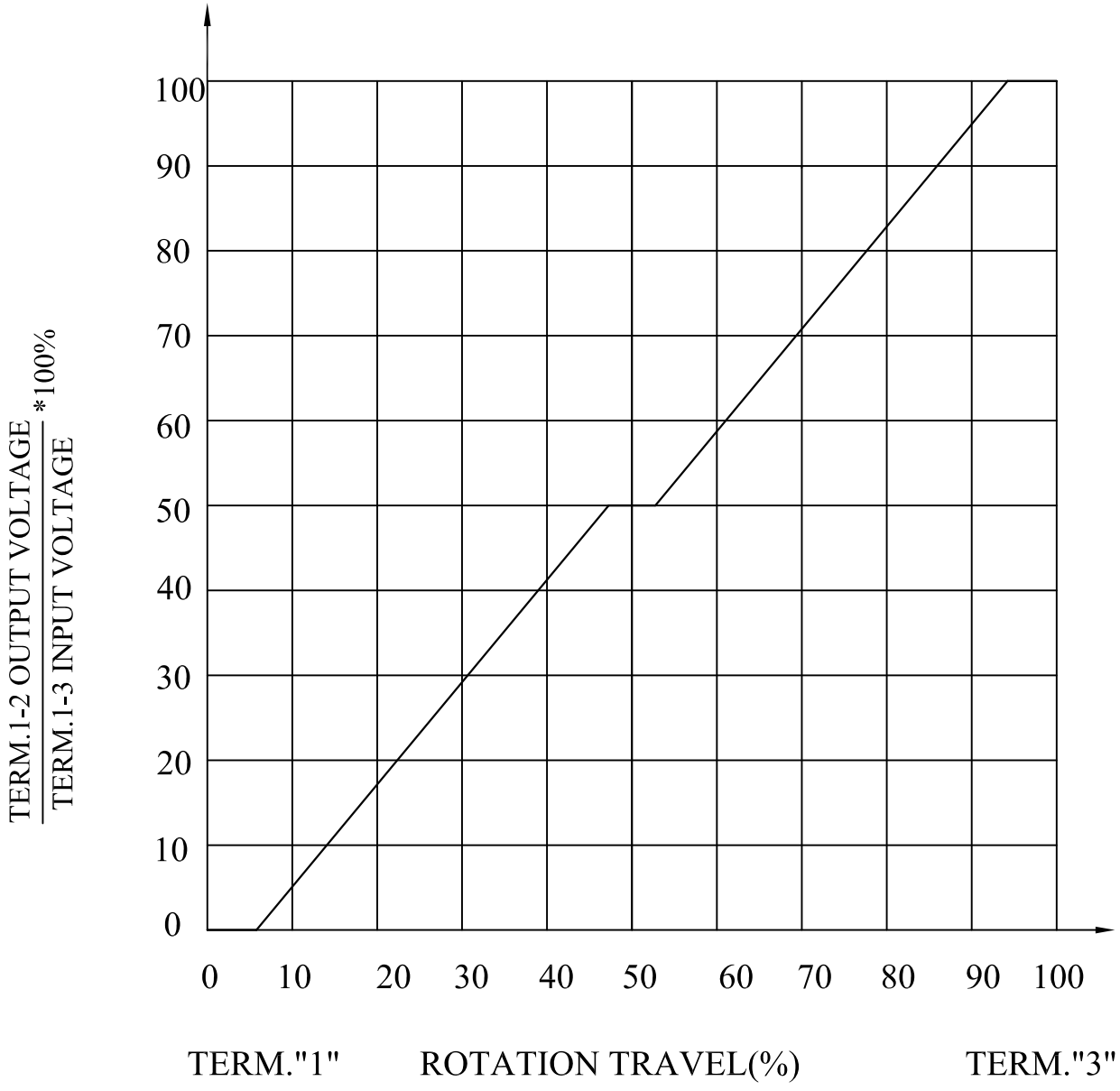
TITLE: P10 Series

DWG NAME: YG10S-V-L5.8-B10Ka(40-8)-A-T04

DWG NO.: F−G04−JP10−XXX

技术支持：hxl@yatelian.com

TAPER (B)SERIES

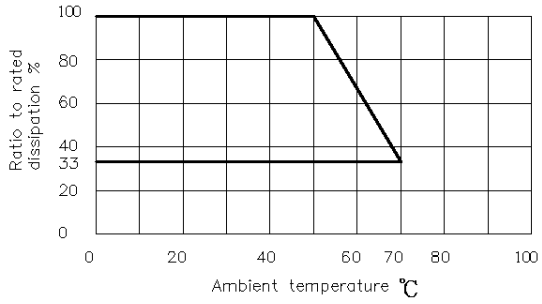


深圳市亚特联科技有限公司
SHENZHEN YATELIAN TECHNOLOGY CO., LTD

一、ELECTRICAL CHARACTERISTICS 电气特性

日期:2025 年 12 月 06 日

序号 NO.	项 目 ITEM	性 能 PERFORMANCE	测试条件 PTEST CONDITIONS
1.1	Total resistance and tolerance 总阻值和误差	10K±20%	The resistance between terminals 1 and 3 shall be measured。 端子 1-3 间阻值测定。
1.2	Angle of effective rotation 碳膜有效角度	40° ±5°	
1.3	Central silver plating angle 中心银层角度	8º ± 2º	When driving mechanism stay at vertical central free position,the angle value from no change to change. 指驱动机构完全垂直停留中心时，从无变化到有变化的角度值.
1.4	Resistance taper 阻抗特性型式	Type B; Refer to attached drawing “Resistance taper characteristics” B 型；见附页“阻型特性图”	Percentage of the voltage of terminal 1-2 to the voltage of terminal 1-3. 端子 1-2 电压对端子 1-3 电压的百分比.
1.5	Rated voltage 额定电压	Linear Taper B：AC 50V DC 5V B 型: AC 50V DC 5V	E= √PR E:额定电压 Rated voltage(V) P:额定功率 Rated power(W) R:公称全阻值 Nominal total resistance(Ω) The rated voltage is calculated by above formula. When the rated voltage exceeds the maximum operating voltage, the maximum operating voltage should be the rated voltage. 额定电压按以上公式计算，当额定电压超过最大工作电压时，最大工作电压即为额定电压.

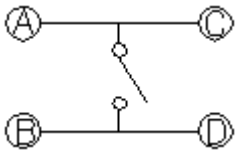
1.6	Rated power 额定功率	Linear Taper B: 0.0125W B 型: 0.0125W	The rated power should be changed according to the following chart when the ambient temperature changed. 它与环境温度按以下曲线变化。 Derating curve of rated dissipation 
1.7	Contact Noisec 接触杂音	20% or less of the total resistance . 全阻值的 20%以下.	By the test angle of less than 90% carbon film angle。 测试角度小于碳膜角度的 90%。
1.8	Insulation resistance 绝缘阻抗值	More than 100 MΩ 100 MΩ 以上	Apply 250V DC to the individual terminals and case. 金属外壳与端子间加 DC 250V 电压.
1.9	Voltage Divider Error 分压误差值	45% ~ 55%	Voltage divider error is defined the ratio of the voltage terminals 1-2 to terminals 1-3 after the drive arm rested. 5V D.C. shall be applied to the terminals between 1and 3 and then voltage divider error shall be measured with the drive arm operation on the line X-X and Y-Y. (Terminal 1-2/Terminal 1-3 × 100%) 分压误差值是摇杆自由复归后端子 1-2 与端子 1-3 电压比例.将 5V D.C 电压加在端子 1-3 之间, 分压误差值在摇杆运作于 X-X 和 Y-Y 方向到底复归后测试.(端子 1-2/端子 1-3×100.
1.10	Withstand voltage 耐电压特性	Without arcing or breakdown 无损坏或弧光.	Apply one minute of 250V AC to the individual terminals and case. 在特定端子与外壳间加 AC 250V 电压 1 分钟.

二、MECHANICAL CHARACTERISTICSS 机械特性			
序号 NO.	项 目 ITEM	性 能 PERFORMANCE	测试条件 TEST METHODS AND REFERENCE
2.1	The stopper strength of the lever 摇杆止动强度	More than 3.0Kgf 3 seconds min 大于 3.0Kgf，至少 3 秒钟	Apply side force on the lever perpendicular to the lever's axial direction. 垂直于摇杆的力作用于摇杆上.
2.2	Push-Pull Strength of Shaft 推拔强度	More than 5.0 Kgf 3 seconds min 大于 5.0Kgf，至少 3 秒钟	Apply side force on the lever perpendicular to the lever's axial direction.. 垂直于摇杆的力作用于摇杆上.
2.3	Operating force of lever 摇杆作用力	■100 ± 50 gf.cm	Test position： More than 10 degrees deflection of lever. 摇杆偏斜 10 度以上之位置测定.
2.4	Accuracy of reset position of lever 摇杆复归精度	± 5°	Measure the angle between the lever and the axial center line after the lever pushed to the direction of X-X(Y-Y) and resets. 摇杆推向 X-X(Y-Y)方向自由复归后测摇杆与垂直中心线的角度.
2.5	Operation angle of lever 摇杆使用有效角度	48° Max 最大 48°	The maximum angle of the lever pushed to the direction of X-X and Y-Y and 45°. 摇杆推向 X-X(Y-Y)和 45°方向的最大角度.

三. ENDURANCE CHARACTERISTICS 耐久性能(Single test of item 单一测试项目)			
序 号 NO.	项 目 ITEM	性 能 PERFORMANCE	测试条件 TEST CONDITIONS
3.1	Free falling 自由落下试验	Without damage and lever deformation,but deformations of terminals and molded parts are allowed.Without the looseness and failing function of witch. 无不良性能产生,无松动及开关性能损坏,端子变形除外。	Height: 75cm Number of falls: 3 times 从高度为 75 厘米落下测试 3 次后.
3.2	Dry heat 耐热性	Variation of total resistance should be within+5%/-30%. To be operated mechanically. 全阻值变化要在+5%/-30%以内。 机械方面能动作。	Temperature: 80 ±2℃ Time: 96 hours The controller shall be subjected to standard atmospheric conditions for 2 hours after which measurement shall be made. 温度在 80±2℃ 放置 96 小时.2 小时后正常状态下测试.
3.3	Cold 耐寒性	The total resistance change should be within ±20%. To be operated mechanically. 全阻值变化要在±20%以内。 机械方面能动作。	Temperature:-30 ±2℃ 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. 温度在-30±2℃放置 96 小时,表面水份摄取后 2 小时正常状态下测试.
3.4	Damp heat 耐湿性	Insulation resistance: more than 20M Ω with 250V insulation resistance tester. The total resistance change should be within ±20%. To be operated mechanically. 用 250V 绝缘测试机测试。绝缘阻抗 20MΩ以上。 全阻值变化要在±20%以内。 开关接触阻抗最大 200mΩ。 开关绝缘阻抗最小 10MΩ 机械方面能动作。	Temperature: 65 ± 2℃ 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. 温度在 65±2℃放置 96 小时,表面水份摄取后 2 小时正常状态下测试。

3.5	Temperature cycling test 温度循环测试	The change of total resistance should be within ±20%, insulation resistance is 100MΩ min,without mechanical malfunction. 全阻值变化±20%以内，绝缘阻抗 100MΩ以上. 机械性能无异常.	Low temperature : -20±3℃ 30 minutes High temperature:60±3℃ 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. 在低温为-20±3℃恒温槽放置 30 分钟,高温 60±3℃放置 30 分钟,测试 5 次，表面水份摄取后在正常狀态下放置 2 小时后测试.
3.6	Resistance to soldering 焊锡性	Not less than 95% of the surface dipped shall be covered with new solder. 浸锡部分表面最少 95%被新锡覆盖。	Temperature of solder:235 ± 5 ℃ , Dipping duration: 3±0.5S. 焊锡温度：235±5℃, 浸锡时间：3±0.5 秒.
3.7	Resistance to soldering heat 焊锡耐热性	Variation of total resistance shall be within ± 5%, and terminals shall not work loose to injure electric contact, after test. 全阻值变化±5%以内,测试后无端子松动,不会损坏电气接点。	Solder dip:浸焊 Preheating condition: Surface temperature of the substrate shall be settled within 100℃ in one min. 预热: 基板表面温度 100℃以下，1 分钟内。 Solder temperature 260±5℃for 5 sec. 焊锡温度 260±5℃，5 秒。 Manual Soldering: Less than 350℃ and quicker than 3 seconds. 手焊: 350℃以下，3 秒以内。
3.8	Number of cycles 耐久次数值	Total resistance ≦ Initial value ± 20%. No mechanical malfunction. 全阻值变化≦初始值±20% . 机械方面能动作.	■Standard life 标准寿命： 100,000 cycles Min 100,000 次以上。

四、SWITCH CHARACTERISTICS (FOR WITH-SWITCH TYPE)
开关规格(适用于带开关机种)

序号 NO.	项　目 ITEM	性　能 PERFORMANCE	测试条件 TEST CONDITIONS
4.1	Operating force 作动力	■650±200 gf.cm	Apply side force perpendicular to the lever's axial direction on the lever until the lever stops, measure the max force value. 将一个轴向力施加于摇杆上直到其不动为止,量取施力期间之最大值.
4.2	Travel 移动量	0.3±0.2mm	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. 将开关操作部(摇杆)置于静止位置,并在操作柄中央施加 2 倍于作动力之静负荷测量柄被压到不动时之移动距离.
4.3	Push strength 按压强度	No mechanical and electrical malfunction. 不得有电气及机构上之异常现象.	Put the switch lever upward; apply 3.0kgf of the static load over the vertical direction of the lever for 60 seconds. 将开关之操作部(摇杆)置于垂直方向,并沿操作方向加 3.0kgf 之静负荷 60 秒.
4.4	Circuit diagram 电路图		/
4.5	Contact resistance 接触阻抗	Less than 100 mΩ 低于 100 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. 将两倍于作动力之静负荷加于操作柄之中央以(1KHZ,20mV, 5~50mA)微电流接触阻抗计测定.

4.6	Insulation resistance 绝缘阻抗	More than 100 MΩ 100 MΩ以上	A voltage of DC 100V is applied between terminals. 以 DC 100V 之电压加于端子间测定.
4.7	Withstand voltage 耐电压	There shall be no damage, arc or dielectric breakdown. 无绝缘破坏之现象.	A voltage of AC 250V(50~60HZ) shall be applied for 1 min between terminals. 以 AC 250V(50~60HZ)电压施加于端子间 1 分钟.
4.8	Maximum Ratings 最大定格电压	12 V DC 50 mA	Within 70℃ 小于 70℃
4.9	Number of cycles 开关耐久次数	Contact resistance 200m Ω Max, No mechanical malfunction. 接触阻抗最大 200mΩ。 机械方面能动作。	■100,000 Cycles min

五、General 一般事项

序 号 NO.	项 目 ITEM	
5.1	Unless otherwise specified, test and measurement should be carried out in following condition: 如无特殊要求,试验与测试将按以下条件进行：	
	Ambient temperature 温度	15˚C to 35˚C
	Relative humidity 相对湿度	25% to 75%
	Air pressure 气压	86 KPa to 106 KPa
5.2	Operating temperature range 使用温度范围	-30˚C to +80˚C
5.3	Storage temperature range 储存温度范围	-30˚C to +80˚C

Approval 核 准	Auditing 审 查	Projected 经 办
张工	宋工	赵工

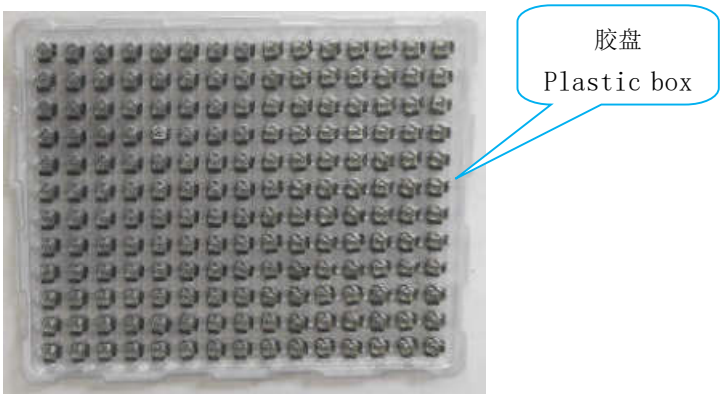
1. 成品包装方式 PACKAGING METHOD:

1.1 将 V.R 成品放置于单个胶盘内，并将胶盘叠放在一起，最下面和最上面一层放置硬卡纸，再将其扎好。

Let the V.R be placed into plastic box , and the plastic boxes be superposed one by one , Place cardboard on the bottom and top layers and use adhesive tape them together.

1.2 将扎好的胶盘放置外箱内，放好后用胶纸将外箱封口。

Let the packed plastic boxes be placed of the carton and use adhesive tape to seal.



2. 规格与数量 SPECIFICATION AND QUANTITY:

2.1 胶盘包装 V.R 数量:1 个胶盘放置 180PCS

Plastic box**:** 1 plastic box for 180PCS

2.3 外箱包装 V.R 数量:20×180=3,600PCS

A carton contain: 20×180=3,600PCS of V.R