

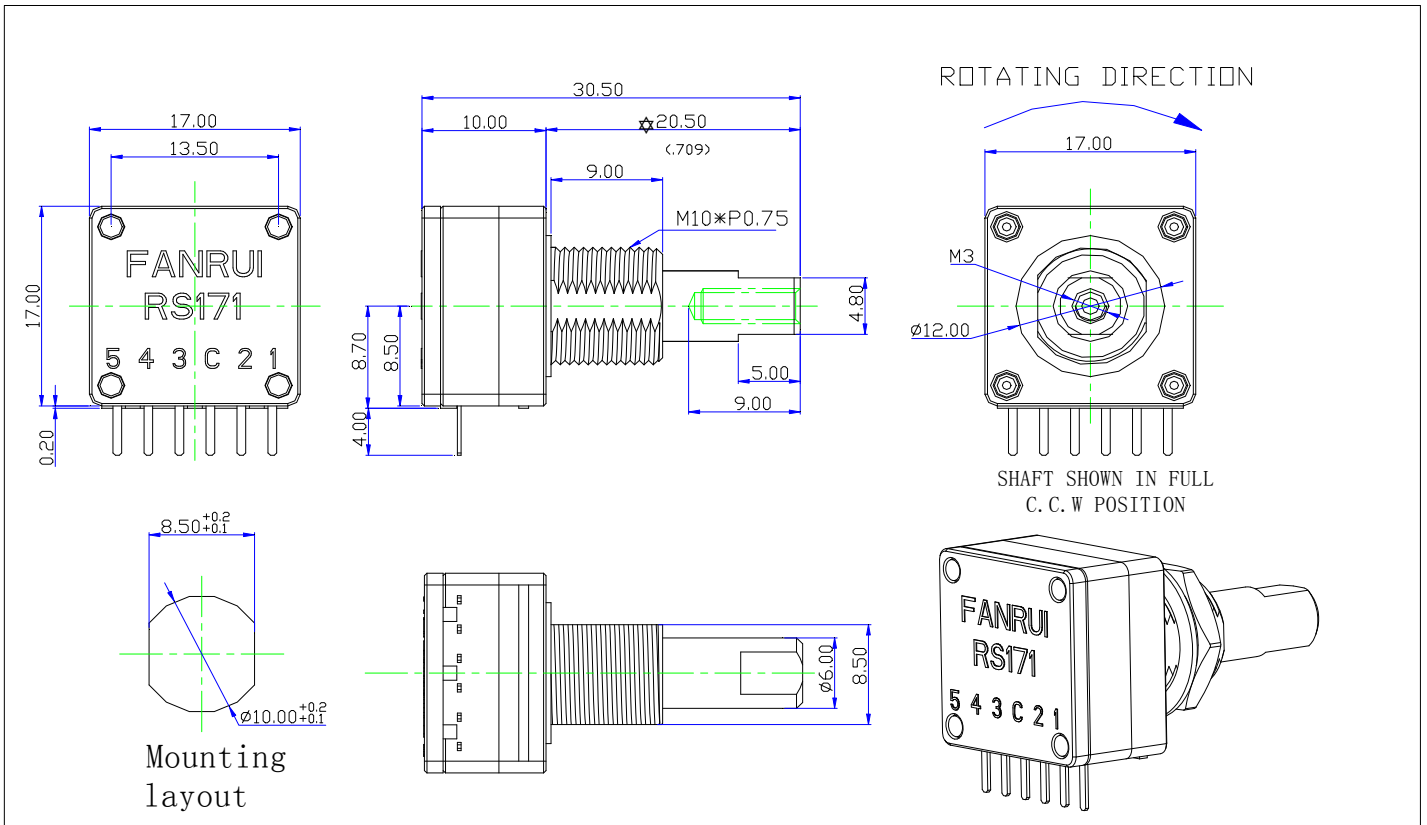


东莞市凡睿电子科技有限公司

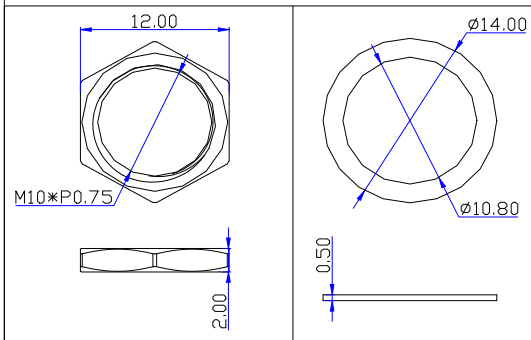
DONGGUAN FANRUI ELECTRONICS&TECHNOLOGY CO., LTD.

TEL: (+86) 0769-86866001 13751429385 FAX: (+86) 0769-82991458 E-mail: fanrui@dgfanrui.com

网址: http://dgruifengkj.1688.com http://www.dgfanrui.com 地址: 广东省东莞市茶山镇京山第三工业区二路3号



52	Angle	C connected with					
		1	2	C	3	4	5
0	0°	●	●	●	●	●	⊗
1	36°	⊗	●	●	●	●	⊗
2	72°	●	⊗	●	●	●	⊗
3	108°	⊗	⊗	●	●	●	⊗
4	144°	●	●	⊗	●	●	⊗
5	180°	⊗	●	⊗	●	●	⊗
6	216°	●	⊗	⊗	●	●	⊗
7	252°	⊗	⊗	⊗	●	●	⊗
8	288°	●	●	●	●	⊗	⊗
9	324°	⊗	●	●	●	⊗	⊗



Title RS17 Series			
Code			
Dwg Name RS17112-52-10P-9C500-M10B9-T20.5A5			
Dwg No	GC-G-RS171-001	Version	1
DESIGN	CHECK	APPROVAL	

3			
2			
1			
Devision	Date	Design	
Unit	Scale	TOLERANCE	
MM	3:1	UNDER 10	±0.3
MTL		10~100	±0.5
SPEC		OVER 100	±0.8
DISPOSAL		ANGULAR DIMENSION	±5°



东莞市凡睿电子科技有限公司

DONGGUAN FANRUI ELECTRONICS&TECHNOLOGY CO., LTD.

TEL: (+86) 0769-86866001 13751429385 FAX: (+86) 0769-82991458 E-mail: fanrui@dgifanrui.com

网址: http://dgruifengkj.1688.com http://www.dgifanrui.com 地址: 广东省东莞市茶山镇京山第三工业区二路3号

1、一般事项 General

1-1 适用规格 Scope

本规格书适用于 171 型多路开关。

This specification applies to more than 171 type way switch

1-2 标准状态 Standard atmospheric conditions

除另有规定外，测量应在以下状态下进行：

Unless otherwise specified, the standard range of atmospheric conditions For making measurements and test is as following limits:

温度 Ambient temperature : 15°C to 35°C

相对湿度 Relative humidity : 25 % to 85%

气压 Air pressure : 86 kPa to 106 kPa

1-3 使用温度范围 Operating temperature range : - 30 °C to +80 °C

1-4 保存温度范围 Storage temperature range : - 35 °C to +85 °C

2、构造 Construction

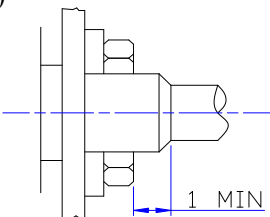
2-1 尺寸 Dimensions

见所附成品图 Refer to attached drawing

3、额定值 Rating

3-1 额定电压： Rated voltage : D.C 10V 10mA(1mA MIN)

4. Mechanical Characteristics

Item 项目		Measuring condition 测试条件	Specifications 规格
Rotation operation (Encoder block) 回转操作	4.1	Changeover 切换角度	Effective switching angles 有效切换角度
	4.2	Rotation torque 回转力矩	36°±3°
	4.3	Push-pull strength 轴的推拉强度	Push and pull static load of 10Kg shall be applied to the shaft in the axial direction for 10s.(after soldering of the PC board) 在轴端,沿轴向施加 10kg 的静负荷力推和拉各 10 秒钟(产品焊锡固定在 PCB 上。)
	4.4	Shaft stop-per strength 轴转动止档强度	Without damage and abnormal on the outlook and function of the shaft. Electrical characteristics should be satisfied. 轴无破损,旋转无异常。电气性能符合规定要求。
	4.5	Shaft stop-per strength 轴转动止档强度	Rotational morment shall be applied to the shart for is at both end. Add 5kg.cm torque and hold for 5 seconds. 将轴旋转至两边止档位置,加 5kg.cm 力矩并保持 5 秒
	4.6	轴的回转方向摆动 Shaft play in rotational wobble	A momentary load of 1Kgf shall be applied at the point 5 mm from the tip of the shaft in a direction perpendicular to the axis 焊锡后在与轴垂直的端面 5mm 处施加 1Kgf 静载荷
	4.7	轴套锁紧强度 Bushing nut Tightening strength	Use angle plate measurement. Measurement with jig for rotational angle. 依下图(图五)安装方式。 Tighten the nut according to (fig.5) 图五(fig.5) 



东莞市凡睿电子科技有限公司

DONGGUAN FANRUI ELECTRONICS & TECHNOLOGY CO., LTD.

TEL: (+86) 0769-86866001 13751429385 FAX: (+86) 0769-82991458 E-mail: fanrui@dgifanrui.com

网址: <http://dgruifengkj.1688.com> <http://www.dgifanrui.com> 地址: 广东省东莞市茶山镇京山第三工业区二路3号

5. Encoder electrical characteristics

Item 项目	Measuring condition 测试条件	Specifications 规格
5.1 Sections 段数		<input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input checked="" type="checkbox"/> 9 <input type="checkbox"/> 10
5.2 Rating 额定值	Rating of voltage and current between. 端间额定电压和电流	D.C16V 0.3A
5.3 Insulation resistance 绝缘电阻	Measure to Apply D.C100V. (Between terminal for reinforcing and the other terminals) D.C100V 测试 (在塑胶与接线端之间)	≥100MΩ
5.4 Withstand voltage 耐电压	Apply A.C100V for 1min. (Between terminal for reinforcing and the other terminals) C100V1 分钟 (在塑胶与接线端之间)	No damage. Arc and dielectric breakdown. 无损伤、电弧和电故障
5.5 Contact resistance 接触电阻	Shall be measured at 1kHz±200Hz(max.20mV,max.50mA) or 5VDC, 1A by a voltage drop method. 在直流电压 5V, 电流 1A, 频率为 1kHz±200Hz 下测试	≤100mΩ

6. Endurance

Item 项目	Measuring condition 测试条件	Specifications 规格
6.1 Heat resistance 耐热特性	Temperature 85±2℃ Time 96 ±10hours After that , leave in ordinary temp and humidity for 1.5 hour. Then measure. 温度 85±2℃ 时间 96 ±10 小时 然后放置在常温和湿度下 1.5 小时再测试。	Specification in clause all items in shall be satisfied. 所有项应满足初期规格
6.2 Moisture resistance 耐湿特性	Temperature 40±2℃ Humidity 90~95%Rh Time 96±10 hours After that , leave in ordinary temp and humidity for 1.5 hour. Then measure. 温度 40±2℃ 湿度 90~95%Rh 时间 96±10 小时 然后放置在常温和湿度下 1.5 小时再测试。	The same as above. 同上



东莞市凡睿电子科技有限公司

DONGGUAN FANRUI ELECTRONICS&TECHNOLOGY CO. , LTD.

TEL: (+86) 0769-86866001 13751429385 FAX: (+86) 0769-82991458 E-mail: fanrui@dgfanrui.com

网址: <http://dgruifengkj.1688.com> <http://www.dgfanrui.com> 地址: 广东省东莞市茶山镇京山第三工业区二路3号

Item 项目		Measuring condition 测试条件	Specifications 规格
6.3	Low temperature resistance 耐寒特性	Temperature -30±2℃ Time 96±10 hours After that , leave in ordinary temp and humidity for 1.5 hour. Then measure. 温度 -30±2℃ 时间 96±10 小时 然后放置在常温和湿度下 1.5 小时再测试。	The same as above. 同上
6-4	耐落下性 Free falling	制品从 60cm 高度以任意方向自由落到铺展在水泥地面上的塑胶垫上。 The encoder shall be fallen freely at any posture from 60cm height to the concrete floor covered with vinyl-tile. After which measurement shall be made.	没有明显的变形、破损。应满足初期规格。(但端子变形除外) No excessive deformation or damage. (Except the deformation of terminals.) And specifications in clause 4.1~4.6 and 5.1~5.3 shall be satisfied.
7、Endurance characteristics			
7-1	回转寿命 Rotational life	在无负荷条件下轴以 800/h 速度回转 30,000 周。 The shaft of encoder shall be rotated to 30,000 cycles at a speed of 800/h without electrical load, after which measurements shall be made.	Contact resistance 100 mΩ or less Specification in clause shall be satisfied. 接触电阻: ≤100mΩ. 其他应满足初期规格



8、焊接条件 Soldering conditions

8-1 手工焊接 Manual soldering

温度 260℃ 以下, 时间 5 秒以内。

Bit temperature of soldering iron : 260℃ or less.

Application time of soldering iron : within 5s.

8-2 槽焊 Dip soldering

使用基板: t=1.6 的单面覆铜板。

Printed wiring board: Single-sided copper clad laminate board with thickness of 1.6mm.

焊剂: 采用比重为 0.83±0.05 以上的焊料和发泡式助焊剂, 浸入深度不超过基板厚度的二分之一, 且基板表面不得有焊剂流入。

Flux: Specific gravity: 0.83 or more. Flux shall be applied to the board using a bubble foaming type fluxer. The board shall be soaked in the flux bubble only to the middle of its thickness. Flux shall not come into contact with the component side surface.

预热: 基板表面温度 100℃ 以下, 时间 50~70 秒以内。

Preheating: Surface temperature of board: 100℃ or less.

8-3 焊接: 温度 350℃±5℃ 以下、时间 5±1 秒以内。

Soldering: Solder temperature: 350℃ or less. Immersion time: Within 3s.

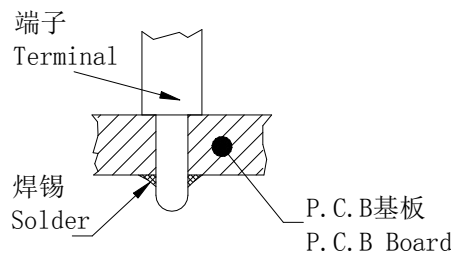
以上操作不得重覆二次以上。

Apply the above soldering process for 1 or 2 times.

9、焊接注意事项 Note for soldering method

9-1 如下图所示, 请不要在 P.C.B 板上焊接处附近配线。

Please avoid soldering on upper surface (the component side surface) of the PC board as shown below.



插脚式机种焊线图

7-2 焊接后洗净后, 如果焊剂流入可时能产生接触不良, 请注意!

10、其它, 使用方面的注意事项

Precautions in use.

10-1 避免储藏与高温潮湿及腐蚀的场所, 产品沟入后尽可能在 6 个月内使用完。拆包装后未使用完的剩余产品需储藏于防潮防毒的环境下。

Avoid storing the products in a place at high temperature, high humidity and in corrosive gases. Please use this product as soon as possible with 6 months limitation. If any remainder left after packing is opened, please store it with proper moisture proofing, gas proofing etc.

10-2 本制品本体若接触水分则会产生异常影响, 避免直接接触水分。

If the product body is in contact with water, it will have abnormal effects. Avoid direct contact with water.

10-3 本制品对轴不能施加横压力, 为避免制品机能损伤, 应事先设置旋钮方向。

The shaft can't be over pressure. For avoided damaged the function, please Pre-setting the button direction.

10-4 本制品对轴不要施加过大的冲击力, 以免使产品机能受损。

Please don't shocking the shaft. To avoided damaged the function.



11、包装部分 Packing Specification

11-1 包装盒 Package

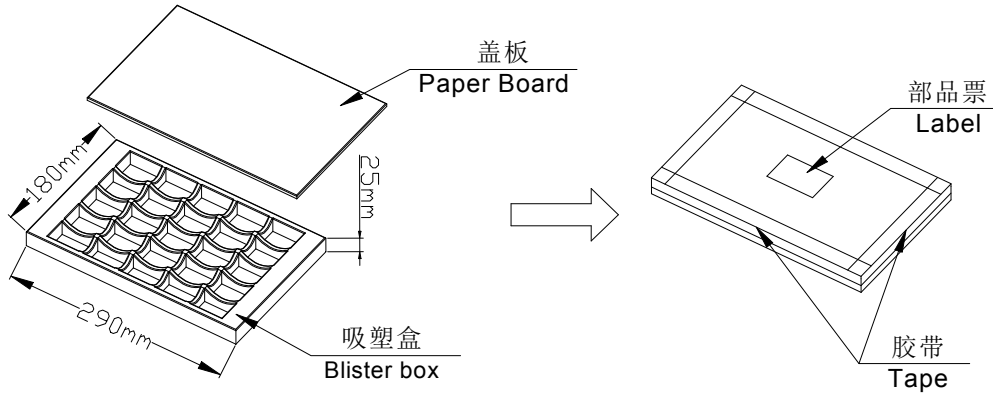
50 个装吸塑盒

50PCS per Blister box

11-2 包装盒尺寸 Box size

长*宽*高: 290mm*180mm*25mm

Length * width * height: 290mm*180mm*25mm



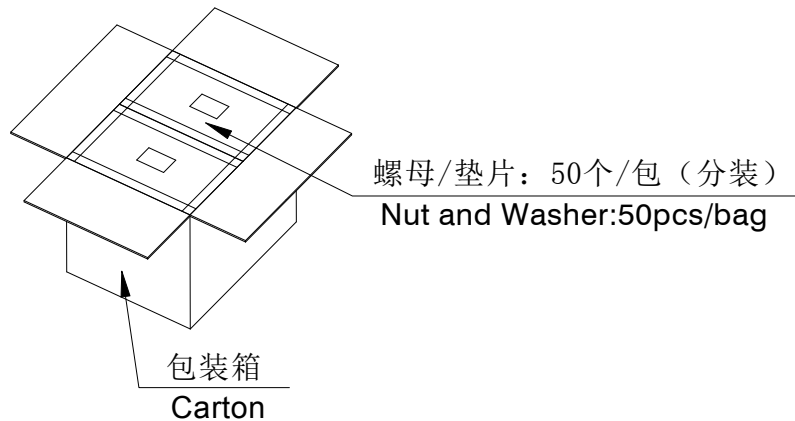
9-3 包装数量 Number of packages

800PCS/箱: 每箱 16 盒, 分 10 层, 每层 2 盒。

800PCS/ Carton: 16 boxes per carton, total 10 floors, 2 boxes per floor.

1000PCS/箱: 每箱 20 盒, 分 10 层, 每层 2 盒。

1000PCS/ Carton: 20 boxes per carton, total 10 floors, 2 boxes per floor.



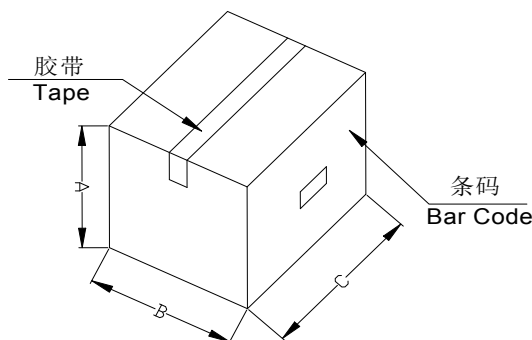
9-4 外箱尺寸 Carton size

800PCS 外箱长*宽*高: 440mm*345mm*170mm

800PCS/ Carton: Length * width * height: 440mm*345mm*170mm

1000PCS 外箱长*宽*高: 440mm*345mm*200mm

1000PCS/ Carton: Length * width * height: 440mm*345mm*200mm



No.	外箱规格			外箱包装数量
	A	B	C	
1	170	345	440	800PCS
2	200	345	440	1000PCS