承　认　书
Specifications For Approval

Customer		Part No.:	
Gangyuan Model	G15	Gangyuan Part No.	G15-03SM40-100-621

Approved by Gangyuan

Approved by	Checked by	Prepared by

Approved by Customer

Research & Development by	Quality Assurance by

Remark:

1:This product specification is considered as the technical agreement between the receiving customer and Gangyuan, Any information on the general product catalogue which is in conflict with or differentform from the corresponding information of this document is considered as invalid.

2:If customer issue purchase orders without confirmation by signature of this specification after receipt,such confirmation will be considered as granted upon receipt of the first purchase order.
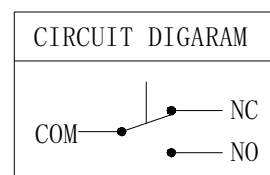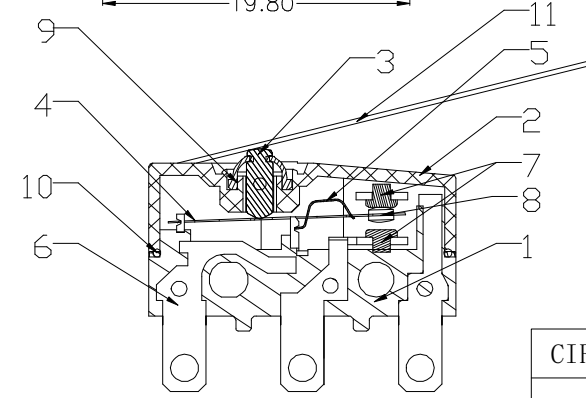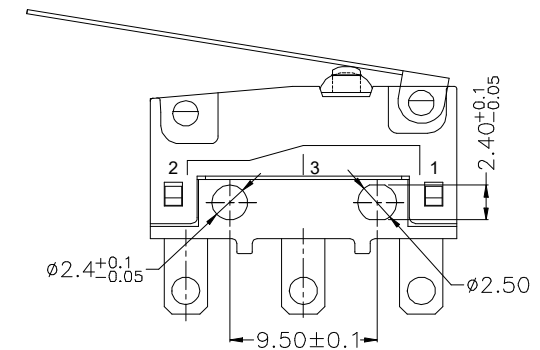
客　户　签　署 (盖章)
Sing for customer approved

港　源　签　署 (盖章)
Sing for GangYuan approved

确认日期：＿＿＿＿＿＿＿＿

送承认日期：

变 更 履 历 表

REV	变更内容描述 DECSRIPTION	修订日期 DATE	生效日期 DATE	变更人 NAME

标 记	处 数	更改单号	签 名	日 期

G15-03 3A 250VAC / 3A 30VDC

C   NO   NC

13.1±1.5
7.50
3.50
10.10
9.30
PT=3.5 Max
OP=8.80±1.2
Ø1.80
3−2.80
3.40
5.00
7.60
7.60
19.80
0.50
6.40
2.40 +0.1 −0.05
2   3   1
Ø2.4 +0.1 −0.05
Ø2.50
9.50±0.1

CIRCUIT DIGARAM

COM — NC
COM — NO
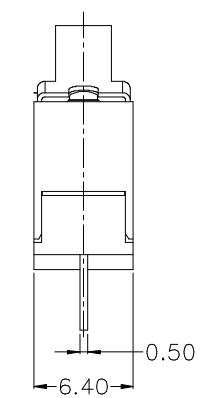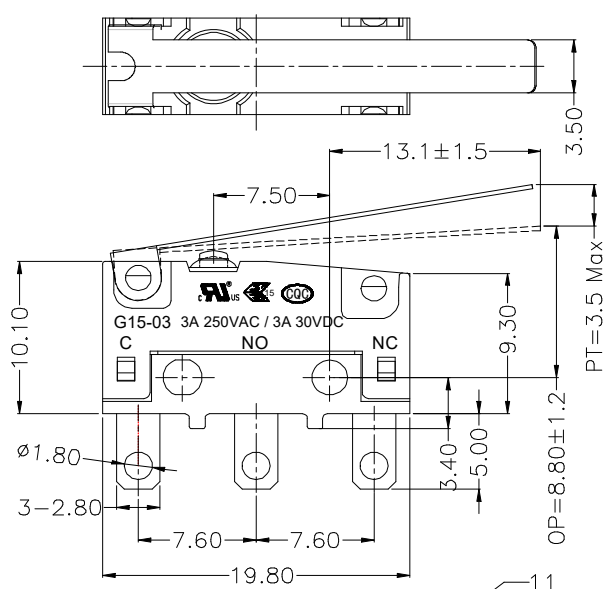
SPECIFICATION（技术要求）
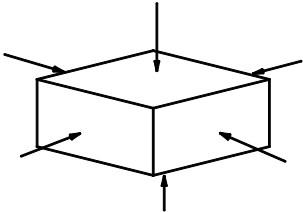
1. Operating Temperature Range(环境温度)：−40℃～+85℃
   Operating Relative Humidity(环境湿度)：≤95%
2. Rating(额定参数)：3A 250V AC /3A 30V DC ；
3. Contact Resistance(接触电阻)：≤100mΩ
4. Insulation Resistance(绝缘电阻)：≥100MΩ
5. Dielectric Withstanding Voltage(耐电压)：1000V AC 1Min
6. Soldering Temperature(焊接温度)：260±5℃ 5s
7. Operating Force(操作力)：100gf Max
8. Life Time(mating cycles)寿命：50000 Cycles
9. Pass grade 7 waterproof test report（通过7级防水试验报告）

NO.	Part Name零件名称	Qty数量	Material材料规格	Plating/Color镀层及颜色
11	压柄Operating rod	1	Sus	
10	密封垫Rubber mat	1	进口硅胶Silica gel	
9	防水圈Waterproof Ring	1	进口硅胶Silica gel	
8	切换片银点Silver point	1	银合金 Silver alloy	镀银 D.Ag
7	端子银点Silver point	2	银合金 Silver alloy	镀银 D.Ag
6	端子Terminal	1	黄铜 Brass	镀银 D.Ag
5	弹片Shrapnel	1	铍青铜 Beryllium bronze	
4	切换片Switch piece	1	铍青铜 Beryllium bronze	
3	按钮Button	1	PBT	黑色 Black
2	上盖Cover	1	PBT	黑色 Black
1	底座Base	1	PA66 30%GF	黑色 Black

未 注 尺 寸 公 差		产品名称	微动开关	图号：		共_1_页 第_1_页
0-10：±0.20	26-50：±0.40					
11-25：±0.30	∠：±2°	产品型号	G15-03SM40-100-621	投影：	比例 1:1	重量	版本 A/0
设 计	卓成勇 2020-05-15					
审 核	张裕丰 2020-05-15	零部件名称				
批 准	王飞凌 2020-05-15	物料编码				

温州港源电子有限公司
WENZHOU GANGYUAN ELECTRONICS CO.,LTD.

1. General Characteristics 一般特性：

1.1 Application: This specification is applied to the micro switch (G15 series) for general applications.
    适用范围：该承认书微动开关（G15 系列）的一般使用范围。

1.2 Operating Temperature Range: -40℃～+85℃
    使用温度范围：   -40℃～+85℃

1.3 Operating Relative Humidity: ≤95%
    相对湿度：   ≤95%

    Test Conditions: Unless otherwise specified, the atmospheric conditions for making measurements and tests are as follows:
    实验条件：若没有特别说明，则试验大气条件如下：

    Ambient Temperature: 5~35℃
    环境温度：   5~35℃
    Relative Humidity: 45~85%
    相对湿度：   45~85%
    Air Pressure: 86~106Kpa (860~106mbar)
    大气压力：   86~106Kpa (860~106mbar)

2. Appearance, Structure and Dimensions 外观，结构及尺寸：

2.1 Appearance: The switch shall have good finishing, and no rust, crack or plating defects.
    外观：   产品外观良好，无锈蚀、裂纹和镀层缺陷。

2.2 Structure & Dimensions: Refer to individual product drawing.
    结构及尺寸：   参见产品图纸

2.3 Markings: Refer to individual product drawing.
    标识：   参见产品图纸。

3. Ratings 额定负荷   3A 250V AC / 3A 30V DC

4. Electrical Characteristics 电气特性

No.	Item 项目	Criteria 标准	Test Method 实验方法
4.1	Contact Resistance 接触电阻	100mΩ Max.	Measured by a voltage drop method at 1A Max, 5Vdc. Any equipment with error not more than 5% can be used. Resistance after test is the average of 5 successive measurements. 以 1A 5Vdc，采用电压降法测量。也可用误差不超过 5%的仪表进行测量，实验后的电阻取 5 次测量的平均值。
4.2	Insulation Resistance 绝缘电阻	100MΩ Min.	500Vdc voltage is applied between each pair of terminals and between the terminal and the metal frame for 60±5S. 在相互绝缘的所有端子之间及各接线端子与外露的非载流金属零件之间加载 500Vdc，持续时间 60±5S。
4.3	Dielectric withstand in voltage 耐压强度	No dielectric breakdown shall occur. 无击穿现象发生。	1000Vac (50~60Hz,cut –off current 10mA) is applied between non-connected terminals and between terminals and the metal frame for 60 ±5s. 在相互绝缘的所有接线端子之间 1000Vac（50-60Hz 电流为 10mA），各接线端子与外壳或非载流金属零件之间加载 1500Vac（50-60Hz），持续时间 60±5S。

5. Mechanical Characteristics　机械特性

No.	Item 项目	Criteria 标准	Test Method 实验方法
5.1	Operating Force 操作力	100gf Max	Apply a tension meter on the midpoint of the actuator (or tip of the shaft) to supply a pressure vertically from its free position to operating position. 在操作元件末端沿操作方向均匀施加静载荷，使操作元件转换到动作位置。
5.2	Return Force 回弹力	5gf Min	The value to which the force in the actuator midpoint (or tip of the shaft) must be reduced to allow the contact to the normal position. 在操作元件末端沿操作方向均匀减少静载荷，使操作元件从动作位置转换到自由位置。
5.3	Operation Position 操作位置	8.8±1.2mm	Position of switch plunge or actuator at which point contacts snap from normal to operated position. Note that the case of flexible of adjustable actuators. 开关操动件受到外力后，由自由状态切换到动作状态的动作位置。（注意防止盖片变形或按钮倾斜现象。）
5.4	Pre Travels 行程	3.5mm Max	The distance vertically through, which the midpoint of the actuator (or tip of the shaft) trip move from its free position to operating position. 从自由位置到动作位置的距离。
5.5	Terminal Strength 接线端强度	Shall be free from terminal looseness, damage and insulator breakage. No functional defective occur 端子无松动，损坏及绝缘层的破裂。无功能性不良	A static load of 25N（2.5kgf）shall be applied to the tip of terminal in a desired direction for 10 ± 1s. The test shall be done once per terminal. 以 25N（2.5kgf）作用力沿轴向逐渐施加于接线端末端 10 ± 1s，作用力方向为离开开关向外指向，每个接线端子测量一次。
5.6	Vibration Proof 振动	After test, Contact resistance:100mΩ Max. Insulation resistance:100MΩ Min. No functional defective occur No abnormalities shall be recognized in appearance and construction. 实验后： 接触电阻：100mΩ Max. 绝缘电阻：100MΩ Min. 无功能性不良。 表面及结构无明显变形。	Switch shall be secured to a testing machine by a normal mounting device and method. Switch shall be measured after following test. (1) Vibration frequency range = 10~55 Hz (2) Total amplitude　　　　=1.5mm (3) Sweep ratio: 10~55~10Hz Approx. 1 min (4) Method of changing the sweep vibration frequency:　logarithmic or linear (5) Direction of vibration: Three perpendicular directions including actuating direction. (6) Duration: 2 hours (6 hours in total) 开关采用常规的安装方法牢固地安装在试验设备上，并在下述参数条件下进行试验： ⑴ 振频=10-55Hz ⑵ 振幅 1.5mm ⑶ 振动变化速率：10-55-10Hz 大约 1 分钟 ⑷ 变频方法：对数或线性型式 ⑸ 振动方向：三个相互垂直的方向，其中一个方向应是促动元件运动的方向。 ⑹ 时间：每个方向 2 小时（共 6 小时）。

No.	Item 项目	Criteria 标准	Test Method 实验方法
5.7	Mechanical Shock 冲击	After test, Contact resistance:100mΩ Max. Insulation resistance:100MΩ Min. No functional defective occur No abnormalities shall be recognized in appearance and construction. 实验后： 接触电阻：100mΩ Max. 绝缘电阻： 100MΩ Min. 无功能性不良。 表面及结构无明显变形。	Switch shall be measured after following test: (1) Mounting Method: Normal (2) Acceleration: 490m/s² (50G) (3) Duration: 11ms (4) Test Direction: 6 directions (5)Number of shocks: 3 times per direction (18 times in total) 试件在下述参数条件下进行试验： ⑴ 安装方法：常规方法 ⑵ 加速度：490m/ s² (50G) ⑶ 时间：11ms ⑷ 实验方向：图示 6 方向 ⑸ 冲击次数：每个方向 3 次（总共 18 次）
5.8	Solder Heat Resistance 耐焊接热	No abnormalities shall be observed in appearance and operation. No functional defective occur 无外观及功能损坏。 无功能性不良。	Switch shall be measured after following test: (1) Solder: H63A (JIS Z3282) (2) Flux: Rosin Flux having a nominal composition of 25% solids by mass of water white rosin in methyl alcohol (JIS K 1501) solution. (3) Soldering Temperature & Immersing Time Dip Soldering 260±5° C 5±1s Manual Soldering 380±5° C 2~3s (4)Immersion Depth: (For Dip Soldering) Immersion depth shall be at copper plating portion of PCB after mounting. (Thickness of PCB=1.6mm) 试件在下述参数条件下进行试验： ⑴ 焊料：H63A （JIS Z 3282） ⑵ 焊剂：焊剂，质量百分比为 25%松香，75%甲醇的无色透明溶液。 ⑶ 焊接温度及浸渍时间： 　自动焊接 260± 5℃ 5±1s 　手工焊接 380±5℃ 2~3s ⑷ 浸渍深度：（对于手动焊接） 　接线端应浸到离开关根部 1.6mm 处。

6. Durability characteristics 耐久性能

No.	Item 项目	Criteria 标准	Test Method 实验方法
6.1	Mechanical Life 机械寿命	After test, Dielectric withstand in voltage:750VAC Insulation resistance:50MΩ Min. No functional defective occur The switch shall be free from abnormalities in appearance construction. 实验后： 耐压强度：750VAC 绝缘电阻： 50MΩ Min. 无功能性不良。 开关外观及结构应无损坏	1,000,000 cycles of operation shall be performed continuously at a rate of 20-30 cycles per minute without load. 在不带负荷的条件下，速度为 60 次/分，在寿命试验设备上连续转换 1,000,000 次。
6.2	Electronicss Life 电气寿命		operation shall be performed continuously at a rate of 6-12 cycles per minute with load as follow 在带以下负荷的条件下，速度为 6-12 次/分，在寿命试验设备上连续转换。 3A 250VAC /3A 30V DC 50,000cycles

7. Weather Proof Characteristics 耐候性能：

No.	Item 项目	Criteria 标准	Test Method 实验方法
7.1	Cold Proof 低温	After test, Contact resistance: 1000mΩ Max. Insulation resistance: 50MΩ Min. No functional defective occur。 The switch shall be free from abnormalities in appearance &construction. 实验后： 接触电阻：1000mΩ Max. 绝缘电阻： 50MΩ Min. 无功能性不良。 开关外观及结构应无损坏。	After testing at -40 ± 2°C for 96 hours, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that. Water drops shall be eliminated. 试件在-40±2℃的温控箱内保持 96 小时，然后在正常温度和湿度下恢复 1 小时，并在此后 1 小时内对试品进行测量，水滴应消失。
7.2	Hot Proof 高温		After testing at 85 ± 2°C for 96 hours, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that. 试件在 85±2℃的温控箱内保持 96 小时，然后在正常温度和湿度下恢复 1 小时，并在此后 1 小时内对试品进行测量。
7.3	Moisture Resistance 恒定湿热		After testing at 40 ± 2°C ,95% RH for 96 hours, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that. Water drops shall be eliminated. 试件在 40±2℃，95%RH 的温控箱内保持 96 小时，然后在正常温度和湿度下恢复 1 小时，并在此后 1 小时内对试品进行测量，水滴应消失。

No.	Item 项目	Criteria　标准	Test Method　实验方法
7.4	Temperature Cycling 温度转换	After test, Contact resistance: 1000mΩ Max. Insulation resistance:50MΩ Min. No functional defective occur. The switch shall be free from abnormalities in appearance & construction. 实验后： 接触电阻：1000mΩ Max. 绝缘电阻： 50MΩ Min. 无功能性不良。 开关外观及结构应无损坏。	After 5 cycles of following conditions, the switch shall be allowed to stand under normal temperature and humidity conditions for 1 hour, and measurement shall be made within 1 hour after that. Water drops shall be eliminated. 试件按下述实验条件试验 5 次，然后在正常温度和湿度下恢复 1 小时，并在此后 1 小时内对试品进行测量，水滴应消失。 30 min　30 min　85 ±2℃ Room Temp. -25 ±2℃　10-15min　10-15min 1 cycle
7.5	Salt Mist 盐雾实验	No remarkable corrosion shall be recognized in metal part. 在金属件上没有腐蚀斑点。	The switch shall be checked after following test: (1) Temperature: 35± 2°C (2) Salt Solution: 5±1% (Solids by mass) (3) Duration:132±1 hour After test, salt deposit shall be removed by running water. 试件在下述实验后测量： ⑴ 温度：35±2℃ ⑵ 盐溶液浓度：5±1%（质量百分比） ⑶ 时间：132±1 小时　实验后的盐沉积物用水冲掉。

8.Operating data diagram 操作参数示意图
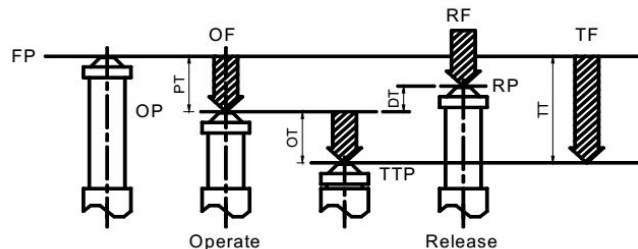
OF:　Operating Force　　操作力
RF:　Release Force　　　回复力
TF:　Total travel Force　　全行程力
FP:　Free Position　　　　自由位置
OP:　Operating Position　　动作位置
TTP: Total Travel Position　全行程位置
RP:　Release Position　　　释放位置
PT:　Pre Travel　　　　　行程
OT:　Over travel　　　　　超行程
DT:　Differential Travel　　差动行程
TT:　Total Travel　　　　　全行程

单击下面可查看定价，库存，交付和生命周期等信息

>>Gangyuan(港源)