



乐清市裕林电子有限公司

Yueqing Yulin Electronia Co., Ltd

Address: .Building 3, No.187, Jingwu Road, Yueqing Economic Development Zone,  
Yueqing City, Wenzhou City, Zhejiang Province, China

Tel: 0577-27878383-8029

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## SPECIFICATION FOR APPROVAL

### 规格说明书

NAME

产品名称: 钮子开关 Toggle Switch

MODEL NO.

产品型号:

PART NO.

产品料号:

DESCRIPTION

产品描述:

CUSTOMER NAME

客户名称:

CUSTOMER PART NO.

客户料号:

Form Designer	Qualified By	Approved By
编制	审核	批准
林毅	瞿斌	金相林



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## 1. 实物图 Picture of real products



## 2. 特点和应用 Features and Applications

开关设计符合UL 61058-1要求

The switch design meets the UL 61058-1 requirements

防护等级IP67

Protection level: IP67

开关工作于各个档位可以有不同颜色指示灯亮起

The switch working in each gear can have different color indicators on

开关具有高强度，耐热外壳设计

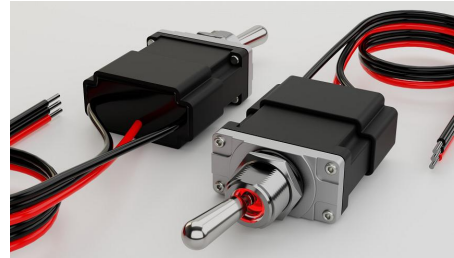
The switch has a high-strength, heat-resistant housing design

寿命长、可靠性高

Long service life, and high reliability

接线方式齐全

Complete wiring mode



可应用于恶劣的户外环境，强烈，潮湿的天气

Can be applied to harsh outdoor environments, strong, wet weather

越野、建筑/农用车辆

Off-road, building / farm vehicles

物料搬运设备

Material handling equipment

铰接、剪式和斗式提升控制

Articulated, shear, and bucket lift controls

户外工业设备

Outdoor industrial equipment

升降门控制

Lift door control

厨房设备

Kitchen fittings

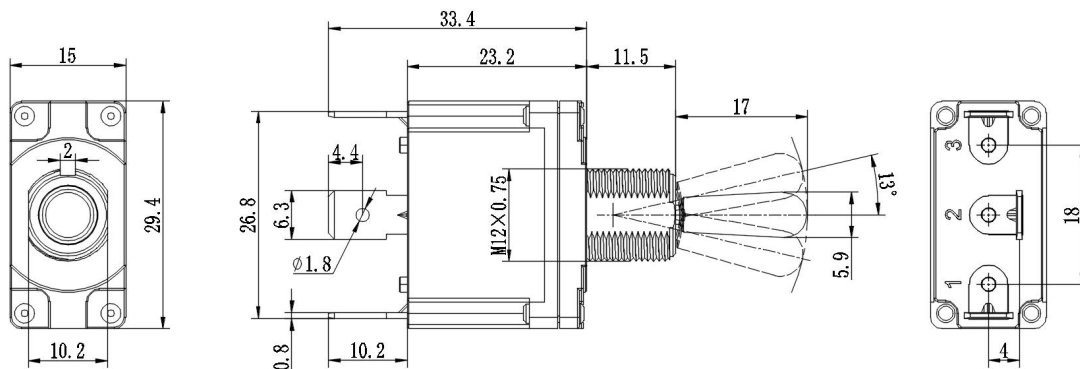
### 3. 主要零件材质 Main Parts Material

底座 BASE	PA66	手柄 ACTUATOR	不锈钢 Stainless Steel
防水圈 O-Ring Rubber	硅胶 Silicone	外壳 SHELL	锌合金 Zinc Die Cast
触点 CONTACTS	银合金 Silver Alloy	端子 TERMINALS	黄铜 Brass
螺母 NUT	黄铜 Brass		

### 4. 规格和尺寸 Specifications and Dimensions

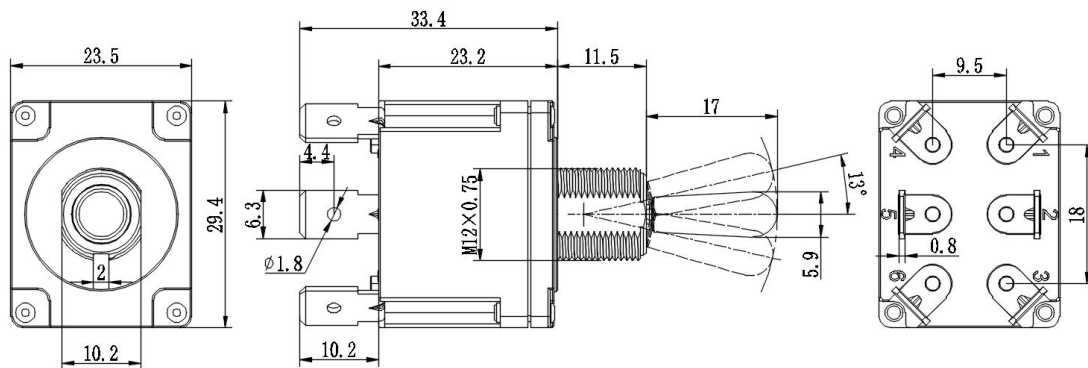
#### SP

NO. POLES	FUNCTION NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
		P-1	P-2	P-3	P-1	P-2	P-3	
SP	11	ON	NONE	OFF	2-1	N/A	OPEN	
	12	ON	NONE	ON	2-1	N/A	2-3	
	13	ON	OFF	ON	2-1	OPEN	2-3	
	14	MOM	NONE	OFF	2-1	N/A	OPEN	
	15	ON	NONE	MOM	2-1	N/A	OPEN	
	16	MOM	NONE	ON	2-1	N/A	2-3	
	17	MOM	OFF	ON	2-1	OPEN	2-3	
	18	MOM	OFF	MOM	2-1	OPEN	2-3	

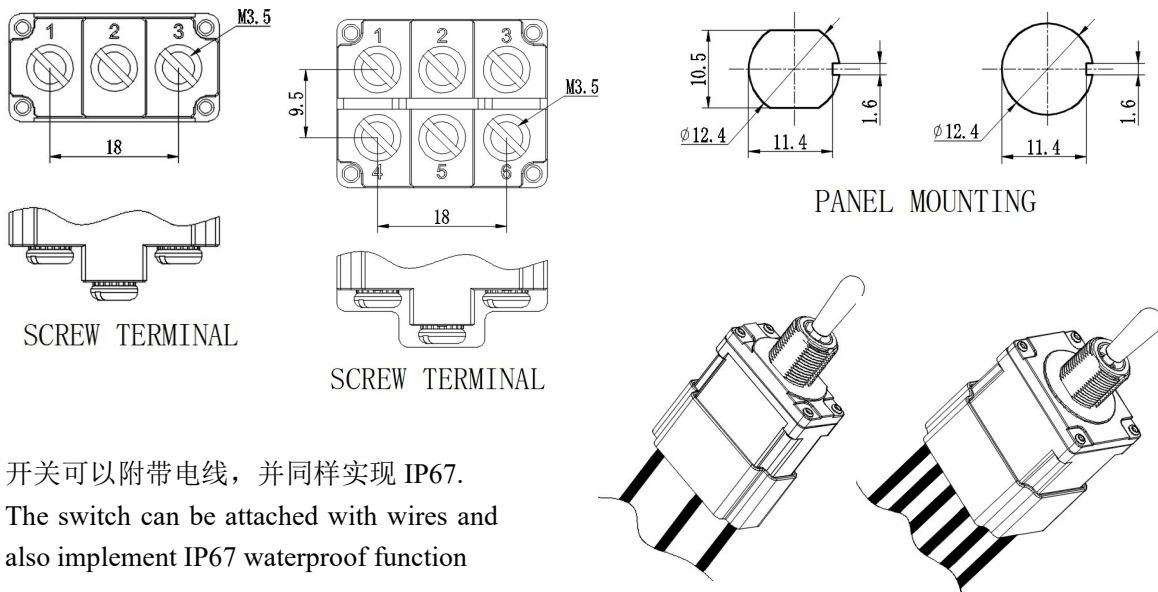


### DP

	NO. POLES	FUNCTION NO.	SWITCH FUNCTION			CONNECTED TERMINALS			SCHEMATIC
			P-1	P-2	P-3	P-1	P-2	P-3	
DP	21	ON	NONE	OFF	2-1, 5-4	N/A	OPEN		
	22	ON	NONE	ON	2-1, 5-4	N/A	2-3, 5-6		
	23	ON	OFF	ON	2-1, 5-4	OPEN	2-3, 5-6		
	24	MOM	NONE	OFF	2-1, 5-4	N/A	OPEN		
	25	ON	NONE	MOM	2-1, 5-4	N/A	OPEN		
	26	MOM	NONE	ON	2-1, 5-4	N/A	2-3, 5-6		
	27	MOM	OFF	ON	2-1, 5-4	OPEN	2-3, 5-6		
	28	MOM	OFF	MOM	2-1, 5-4	OPEN	2-3, 5-6		



### 其他接线方式与安装 Other Wiring Modes and Installation



开关可以附带电线，并同样实现 IP67.

The switch can be attached with wires and also implement IP67 waterproof function



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## 5.运行和储存温度 Operating and storage temperature

-25°C~+85°C。

## 6. 外观和手感 Appearance and feel

6.1 标志清晰牢固；外观清洁美观，无变形，无损伤，无开裂；无锈蚀，无电镀不良；各组件连接牢固，无松动，无脱落；

The signs are clear and firm; clean and beautiful appearance, no deformation, no damage, no cracking; no corrosion, no bad electroplating; all components are firmly connected, without loosening and falling off.

6.2 开关操作灵活，无卡死，无明显摩擦。

Switch operation is flexible, no card dead, no obvious friction

Switch operation is flexible, no card dead, no obvious friction.

## 7. 电气性能 Electric property

项目 Project		测试条件 Test Condition	要求 Requirement
7.1	额定值 Rating	16A 125/250VAC 20A 24VDC	
7.2	接触电阻 Contact resistance	在 1KHz 小电流下测量。 Measured at small currents at 1 KHz	≤50mΩ
7.3	绝缘电阻 Insulation resistance	在端子之间和端子与外壳之间施加 DC500V，一分钟后测量。 The DC500V was applied between the terminals and between the terminals and the shell and measured one minute later.	≥100MΩ
7.4	介电强度 Dielectric strength	端子之间施加 1500VAC，5mA，60 秒（带灯款除外） 1500VAC, 5 mA, 60 seconds between terminals (except with lights)	无击穿或闪络。 No breakdown or flashing contact.
7.5	电气寿命 Electrical life	额定负载情况下，每分钟操作 7.5 次，共进行 10,000 次操作。 7.5 operations per minute for 10,000 operations.	试验后能承受 7.4 介电强度的 75%。 It can withstand 75% of the 7.4 dielectric strength after the test.



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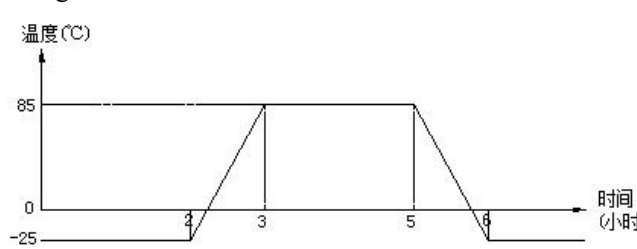
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## 8. 机械性能 Mechanical behavior

8.1	操作力 Operation Force	开关垂直于操作方向放置，在手柄一侧逐渐施力，测量开关导通所需的最大力度。 The switch is placed perpendicular to the operating direction, and the force is gradually applied on the side of the handle to measure the maximum force required for the switch conduction.	按顾客要求。 According to customer requirements.
8.2	端子强度 Terminal Strength	在端子上施加向外拉力 60N 静负荷，持续 60 秒。 An outward pulling force of 60N static load was applied to the terminal for 60s.	端子无损伤，脱落，开关功能动作正常。 The terminal is not damaged, falls off, and the switch function is normal.
8.3	可焊性 Solderability	将端子浸入熔融的锡槽内，温度为 235±5°C，时间为 3±0.5 秒。 The terminals were immersed into the molten tin tank at a temperature of 235 ± 5°C for 3 ± 0.5 seconds.	浸入的部分 90%以上表面被锡覆盖。 More than 90% of the immersed portion of the surface is covered with tin.
8.4	耐焊接热 Welding heat resistance	端子的焊接部分浸入温度为 260±5°C 熔融的锡炉内 3±1 秒。 The welded portion of the terminal was immersed in 260 ± 5°C molten tin furnace for 3 ± 1 seconds.  手工烙铁焊接，焊接温度 350±5°C，焊接时间 3±1 秒。焊接时不得在端子上施加压力。 Manual soldering iron welding, welding temperature 350 ± 5°C, welding time 3 ± 1 second. Do not apply the pressure on the terminals during the welding.	1. 本体无明显变形； No obvious deformation of the body 2. 机械性能，电气性能测试合格。 Mechanical properties, electrical performance test is qualified.



### 9. 耐候性能 Resistant performance

<p>9.1</p>	<p>耐高温 Thermostability</p>	<p>在 85±2°C环境下放置 72 小时，然后在自然环境下放置 1 小时后测试。 At 85 ± 2°C for 72 hours and then in natural conditions for 1 hour before testing.</p>	<p>1. 外观和手感合格； Appearance and feel are qualified 2. 接触电阻≤2Ω； Contact resistance of 2 Ω 3. 耐压测试合格； Competent test qualified 4. 机械性能合格。 Qualified mechanical performance</p>
<p>9.2</p>	<p>耐湿热 Resistance to heat and humidity</p>	<p>在 40±2°C，湿度 91%-95%RH 环境下放置 96 小时，然后在自然环境下放置 1 小时后测试。 At 40 ± 2°C for 96 hours in humidity 91% -95% RH, and then in a natural environment for 1 hour before testing.</p>	
<p>9.3</p>	<p>耐低温 Low temperature resistant</p>	<p>在-25±2°C环境下放置 12 小时，然后在自然环境下放置 1 小时后测试。 For 12 hours in -25 ± 2°C, and then in natural conditions for 1 hour before testing.</p>	
<p>9.4</p>	<p>温度交变 Temperature change</p>	<p>按图示温度和时间进行温度交变，连续 5 次循环，然后在自然环境下放置 1 小时后测试。 Temperature was crossed according to the indicated temperature and time for 5 consecutive cycles and then placed in the natural environment for 1 hour before testing.</p>  <p>The graph shows temperature (°C) on the y-axis and time (hours) on the x-axis. The temperature starts at 85°C, remains constant until 2 hours, then drops to -25°C at 3 hours, remains constant until 5 hours, and then returns to 85°C at 6 hours. This cycle repeats 5 times.</p>	