

SPBo 产品特点与结构及性能 SPBo series of product structure and performance characteristics

产品开关部件（触点）带灯机构模块化：无论平压式或翘板式（触点）均具有相同的外形尺寸，可以任意组合（增加）；按钮增加带灯功能时无需增加产品安装空间，不带灯按钮可同时控制3组开关部件（触点），而不增加产品体积。

开关部件（触点）的自洁能力：秉承双科先进的设计理念，翘板式开关部件（触点）具有自洁能力，随着按钮开关操作的进行，触点可自主清洁表面的灰尘和氧化层，保持产品的通电性能。

防水性能：增加防水设计，防水等级可达IP65。

体积小巧，结构简单：板后尺寸仅为48mm；操作部件与开关部件间的连接更加简单，保证了连接的可靠性和使用寿命，安装更加方便。

通电性能更强：120V电压下可承载10A电流；机械寿命可达100万次。

Product switch parts (contact) mechanism with light modular: regardless of the platen or warped plate (contact) have the same dimension, can be any combination of (increase); push button increase the illuminated function without increasing the product installation space, un-illuminated push button can control 3 groups switch parts (contact) without increasing the volume of the products simultaneously.

Self-cleaning capacity of the switch components (contact): adhering to Shuangke advanced design concepts, warped plate switch parts (contact) with self-cleaning ability, with the operation of the push button switch, the contacts can be self-cleaning surface dust and oxidation layer, Keep the electricity performance of the products.

The waterproof performance: increase the waterproof design, waterproof grade up to Ip65.

Compact, simple structure: the rear dimensions of only 48mm; connection between the operating components and switch components to ensure the reliability and lifetime of the connection, the installation more convenient.

The electricity performance more powerful: 120V voltage can carry 10A current; mechanical life up to one million times.

型号及其含义 Model and implication

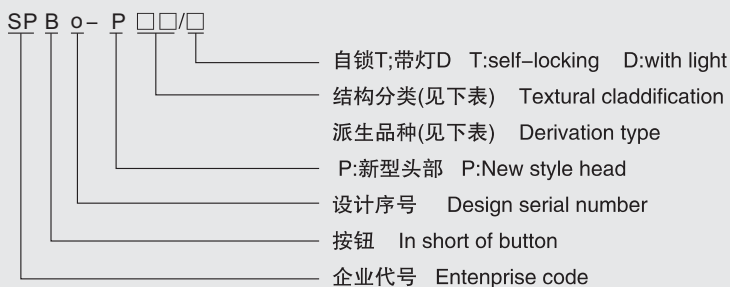


表 Table 1

派生品种 Derivation type	规格代号 Size number	
A: 平钮 A: Flat button L: 高按钮 L: High button LA: 高平钮 LA:Extend push button UA: 低平钮 UA: Low flat button	1: 白 white 2: 黑 black 3: 绿 green 4: 红 red 5: 黄 yellow 6: 蓝 blue	1: 常开 NO 2: 常闭 NC 3: 二常开 2 NO 4: 二常闭 2 NC 5: 常开+常闭 5: NO+NC 6: 二常开+常闭 6: 2 NO+NC 7: 二常闭+常开 7: 2 NC+NO
C: 蘑菇头自复钮 C: mushroom self-reset button S:蘑菇头自锁, 转动复位 S:Mushroom self-lock reset after turning	4: Φ30 5: Φ40 6: Φ60 1: Φ40(钥匙复位)	3: 绿 green 4: 红 red 5: 黄 yellow 1: 常开 NO 2: 常闭 NC 3: 二常开 2 NO 4: 二常闭 4: 2 NC 5: 常开+常闭 5: NO+NC
D: 短柄旋钮 D: Short handle turn button J: 长柄旋钮 J: Long handle turn button G: 钥匙钮 G: Key button	2: 二位置锁定 Two position lock 3: 三位置锁定 Three position lock 4: 二位置复位 Self reset on the two position 5: 三位置复位 Self reset on the three position	1: 常开 NO 2: 常闭 NC 3: 二常开 2 NO 4: 二常闭 4: 2 NC 5: 常开+常闭 5: NO+NC
R: 双位按钮 R: two position push button	43: 红绿 red green 45: 红黄 red yellow 53: 黄绿 yellow green	5: 常开+常闭 5: NO+NC

注：按钮需自锁，在完整型号后加/T；按钮带灯，在完整型号后加/D。

触点部分有SPB0-1(翘板式)，SPB0-2(平压式)，订货时请注明，如无注明我们将提供翘板式触点。

Note: Please add T after full model if you need self locking push button; add D after full model if you need illuminated push button.

Switch contact: SPB0-1 shap action contaot, SPB0-2 slow action contact

1、面板伸出高(10mm)的薄型设计，体现简洁时尚的平面控制面板形象。

可实现形象时尚的装置以及操作控制面板，而且，面板面的凹凸少，在安全层面上，可以降低面板的突起被意外触碰而引起误操作或事故发生，而在卫生层面上也可以减轻灰尘以及垃圾的堆积。

1、The extend length of panel is (10mm) slim design reflects the simple and stylish flat-screen control panel image.

Can realize Image of the stylish device and the operator control panel, and the panel surface of the bump is few, on the security level can be lower panel of the processes being accidentally touching caused by misuse or accident, can also reduce the dust on the health aspects of and the accumulation of garbage.

2、面板后伸出长仅48mm,可进行省空间化设计。

可为装置及控制面板的小型化做贡献，使省空间化设计成为可能。非照明型平钮每层最大可搭载3个触点，可装2层一共6个触点。照明型每层最大可搭载2个触点，可装2层一共4个触点。也可与按钮盒以及其他 $\phi 22$ 安装孔通用控制箱组合。

- 超短机身，却拥有120V AC-10A的触点切换容量。

- 所有照明电压均无需变压器，面板后伸长一致。

2、The rear of the panel elongation only 48 mm, can proceed space-saving design.

To contribute to the miniaturization of device and the control panel, make space-saving design possible. Non-illuminated flat push button on each layer equipped with three contacts can be installed two layers, a total of six contacts. illuminated type on each layer equipped with two contacts can be installed two layers, a total of four contacts. Can also be installed with the button boxes and other $\phi 22$ mounting hole be in common use control box combinations.

- the ultra short body, but with 120 V AC-10A contact switching capacity.

- All lighting voltage without transformers, the rear of the panel elongation unanimously.

3、触头有自清洁功能，低电流也可应用。

无论是平压式触点还是翘板式触点均带有擦拭动作，可实现触头自清洁功能。在操作过程中，动触头滚动，当与静触头接触后便向旁边滑动。由于这一特性即使在低电流应用中也能确保触头自清洁功能。

3、The contact with self-cleaning function, low current can also be applied.

Platen type contacts or warped plate type contact with wiping action can realize contact self-cleaning function. During operation, the moving contact rolling, sliding sideways after contact with the static contact. This feature even in the low-current applications to ensure that the contact self-cleaning function.

4、叠加形式方便实用，2种触点结构供选择。

触点可以叠加，能够灵活应对各种触点结构。触点模块化，触点部分有翘板式、平压式。

翘板式（左）优点：分断速度快，分断能力强。

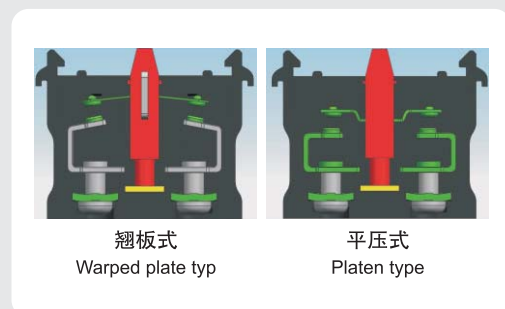
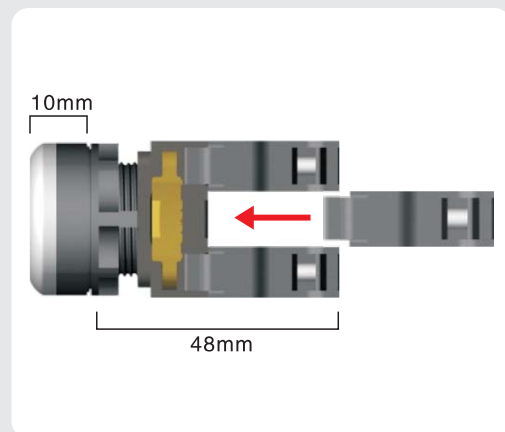
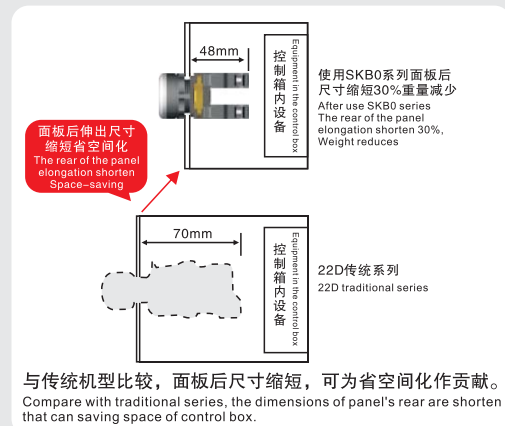
平压式（右）优点：可承载电流大（与翘板式比），过载能力强。


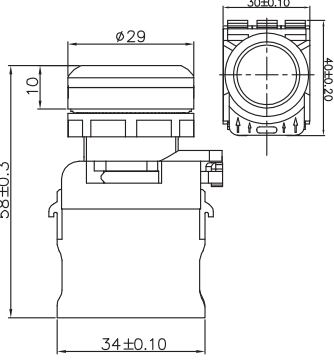

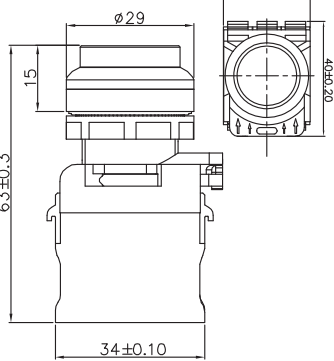

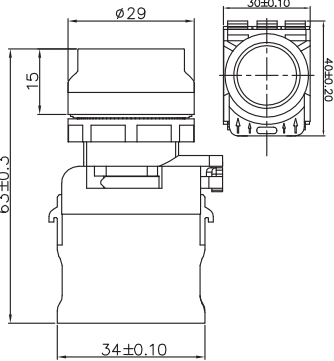

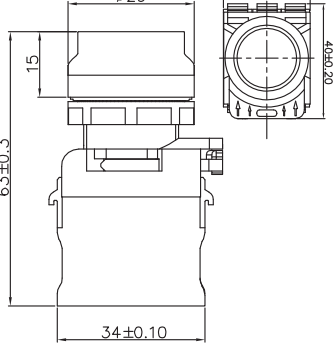
4、Superposition form convenient and practical, the two kinds of contact structures can be choose.

The contacts can be superimposed, able to respond to all the kinds of contact structures flexibly. The modular contacts, the contact part warped plate、platen type.

Warped plate type (Left) Advantages: fast breaking, powerful breaking capacity.

Platen type (right) Advantages: can carry current (compare with warped plate type), strong overload capacity.




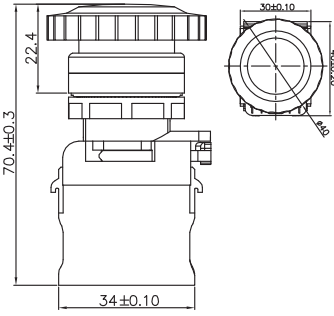

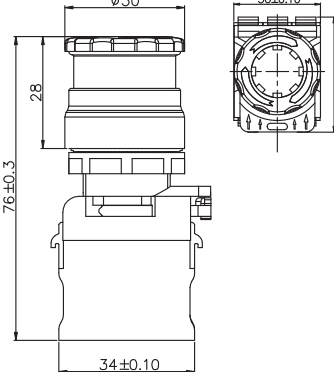

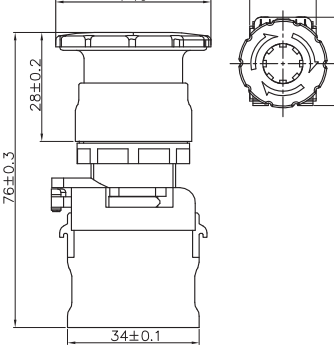

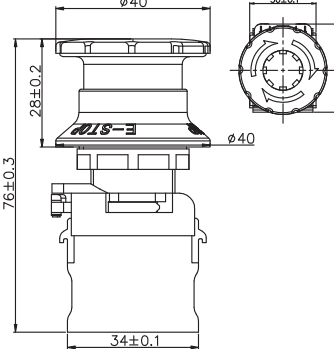
外形图 Outline	功能 Function	型号 Model	颜色 Color	外形尺寸 Overall dimension
 <p>一般按钮 Push button</p>	瞬时型 Instantaneous type	SPB ₀ -PA31 SPB ₀ -PA42 SPB ₀ -PA35 SPB ₀ -PA45	<ul style="list-style-type: none"> ● 红 R ● 绿 G ● 黄 Y ● 蓝 B ○ 白 W ● 黑 K 	
	自锁型 Self-locking type	SPB ₀ -PA31/T SPB ₀ -PA42/T SPB ₀ -PA35/T SPB ₀ -PA45/T		
 <p>高位按钮 High cap button</p>	瞬时型 Instantaneous type	SPB ₀ -PL31 SPB ₀ -PL42 SPB ₀ -PL35 SPB ₀ -PL45	<ul style="list-style-type: none"> ● 红 R ● 绿 G ● 黄 Y ● 蓝 B ○ 白 W ● 黑 K 	
	自锁型 Self-locking type	SPB ₀ -PL31/T SPB ₀ -PL42/T SPB ₀ -PL35/T SPB ₀ -PL45/T		
 <p>高平按钮 Extended push button</p>	瞬时型 Instantaneous type	SPB ₀ -PLA31 SPB ₀ -PLA42 SPB ₀ -PLA35 SPB ₀ -PLA45	<ul style="list-style-type: none"> ● 红 R ● 绿 G ● 黄 Y ● 蓝 B ○ 白 W ● 黑 K 	
	自锁型 Self-locking type	SPB ₀ -PLA31/T SPB ₀ -PLA42/T SPB ₀ -PLA35/T SPB ₀ -PLA45/T		
 <p>低平按钮 Low flat button</p>	瞬时型 Instantaneous type	SPB ₀ -PUA31 SPB ₀ -PUA42 SPB ₀ -PUA35 SPB ₀ -PUA45	<ul style="list-style-type: none"> ● 红 R ● 绿 G ● 黄 Y ● 蓝 B ○ 白 W ● 黑 K 	
	自锁型 Self-locking type	SPB ₀ -PUA31/T SPB ₀ -PUA42/T SPB ₀ -PUA35/T SPB ₀ -PUA45/T		

注：按钮需自锁，在完整型号后加/T；按钮带灯，在完整型号后加/D。


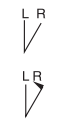
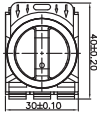
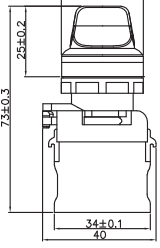




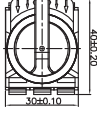
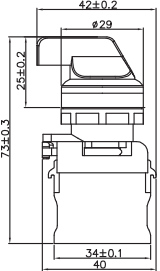

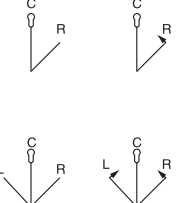
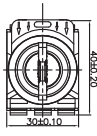
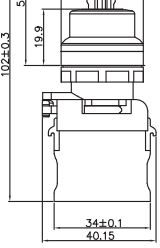

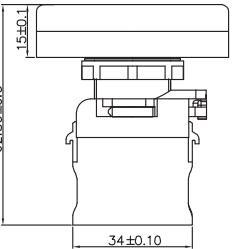

触点部分有SKB0-1(翘板式)，SKB0-2(平压式)，订货时请注明，如无注明我们将提供翘板式触点。

Note: Please add T after full model if you need self locking push button; add D after full model if you need illuminated push button.

Switch contact: SKB0-1 snap action contact, SKB0-2 slow action contact


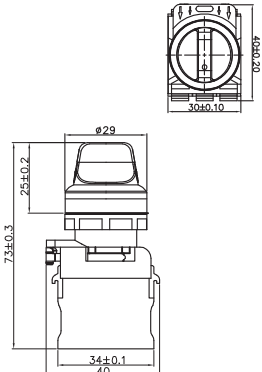

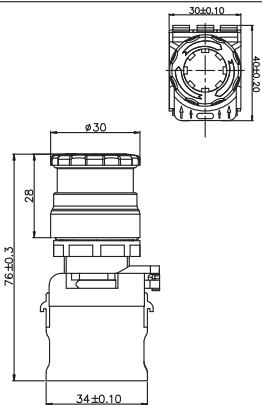

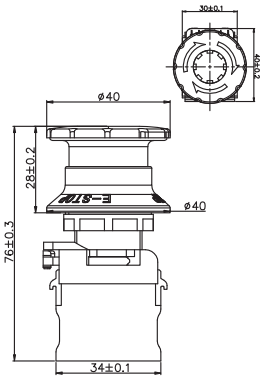

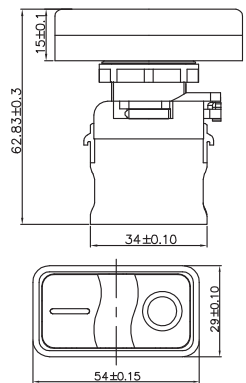
外形图 Outline	功能 Function	型号 Model	颜色 Color	外形尺寸 Overall dimension
 <p>蘑菇钮 Mushroom push button</p>	<p>瞬动型 Instantaneous type</p> <p>自锁型 Self-locking type</p>	<p>SPB₀-PC31 SPB₀-PC42 SPB₀-PC35 SPB₀-PC45</p> <p>SPB₀-PC31/T SPB₀-PC42/T SPB₀-PC35/T SPB₀-PC45/T</p>	<p>● 红 R ● 绿 G ● 黄 Y</p>	
 <p>φ 30紧急钮 Emergeng pnsn button</p>	<p>按压锁定， 顺时针，转复位 Push locking, in clockwise direction, move reset</p>	<p>SPB₀-PS442</p>	<p>● 红 R</p>	
 <p>φ 40紧急钮 Emergency push button</p>	<p>按压锁定， 顺时针，转复位 Push locking, in clockwise direction, move reset</p>	<p>SPB₀-PS542</p>	<p>● 红 R</p>	
 <p>φ 40紧急钮(带告警圈/带灯) Emergency push button (with warning ring/with light)</p>	<p>按压锁定， 顺时针，转复位 Push locking, in clockwise direction, move reset</p>	<p>SPB₀-PS542/□</p>	<p>● 红 R</p>	

注：□带告警圈 with warning ring

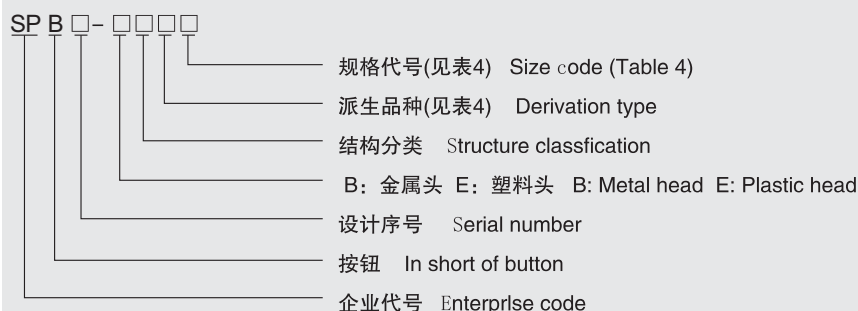
外形图 Outline	功能 Function	型号 Model	颜色 Color		外形尺寸 Overall dimension
 旋钮 Turn button	二位置 Two-position	SPB ₀ -PD21 SPB ₀ -PD25	● 黑 K	手柄位置 Handle position 	 
	三位置 Three-position	SPB ₀ -PD33			
 长柄旋钮 Turn button with long handle	二位置 Two-position	SPB ₀ -PJ21 SPB ₀ -PJ25	● 红 R	  	 
	三位置 Three-position	SPB ₀ -PJ33	● 绿 G ● 黄 Y		
 钥匙钮 Key button	二位置 Two-position	SPB ₀ -PG21 SPB ₀ -PG25		取出位置 Removable position 	 
	三位置 Three-position	SPB ₀ -PG33			
 双位按钮 Double position push button		SPB ₀ -PR435	● 红/绿 R/G		 

外形图 Outline	功能 Function	型号 Model	颜色 Color	外形尺寸 Overall dimension
<p>一般按钮(带灯) Push button(with light)</p>	瞬动型 Instantaneous type	SPB ₀ -PA31/D SPB ₀ -PA42/D SPB ₀ -PA35/D SPB ₀ -PA45/D	<ul style="list-style-type: none"> ● 红 R ● 绿 G ● 黄 Y ● 蓝 B ○ 白 W ● 黑 K 	
	自锁型 Self-locking type	SPB ₀ -PA31/TD SPB ₀ -PA42/TD SPB ₀ -PA35/TD SPB ₀ -PA45/TD		
<p>高位按钮(带灯) High cap button(with light)</p>	瞬动型 Instantaneous type	SPB ₀ -PL31/D SPB ₀ -PL42/D SPB ₀ -PL35/D SPB ₀ -PL45/D	<ul style="list-style-type: none"> ● 红 R ● 绿 G ● 黄 Y ● 蓝 B ○ 白 W ● 黑 K 	
	自锁型 Self-locking type	SPB ₀ -PL31/TD SPB ₀ -PL42/TD SPB ₀ -PL35/TD SPB ₀ -PL45/TD		
<p>高平按钮(带灯) Extended push button(with light)</p>	瞬动型 Instantaneous type	SPB ₀ -PLA31/D SPB ₀ -PLA42/D SPB ₀ -PLA35/D SPB ₀ -PLA45/D	<ul style="list-style-type: none"> ● 红 R ● 绿 G ● 黄 Y ● 蓝 B ○ 白 W ● 黑 K 	
	自锁型 Self-locking type	SPB ₀ -PLA31/TD SPB ₀ -PLA42/TD SPB ₀ -PLA35/TD SPB ₀ -PLA45/TD		
<p>低平按钮(带灯) Low flat button(with light)</p>	瞬动型 Instantaneous type	SPB ₀ -PUA31/D SPB ₀ -PUA42/D SPB ₀ -PUA35/D SPB ₀ -PUA45/D	<ul style="list-style-type: none"> ● 红 R ● 绿 G ● 黄 Y ● 蓝 B ○ 白 W ● 黑 K 	
	自锁型 Self-locking type	SPB ₀ -PUA31/TD SPB ₀ -PUA42/TD SPB ₀ -PUA35/TD SPB ₀ -PUA45/TD		

注：带灯按钮订货时请标注灯电压，电压等级：DC/AC 6V、12V、24V、36V、48V、110V、127V、220V和AC220V、380V。
Note: Lamp button when ordering, please indicate the lamp voltage, the voltage level: DC / AC 6V, 12V, 24V, 36V, 48V, 110V, 127V, 220V and AC220V, 380V.

外形图 Outline	功能 Function	型号 Model	颜色 Color	外形尺寸 Overall dimension
 <p>旋钮(带灯) Turn button with light</p>	二位置 Two-position	SPB ₀ -PD21/D SPB ₀ -PD25/D	<p>● 红 R ● 绿 G ● 黄 Y</p>	
	三位置 Three-position	SPB ₀ -PD33/D		
 <p>φ 30 紧急按钮(带灯) Emergency push button(with light)</p>	按压锁定, 顺时针, 转复位 Push locking, in clockwise direction, move reset	SPB ₀ -PS442/D	● 红 R	
 <p>φ 40 紧急按钮(带灯) Emergency push button(with light)</p>	按压锁定, 顺时针, 转复位 Push locking, in clockwise direction, move reset	SPB ₀ -PS542/D	● 红 R	
 <p>双位按钮(带灯) Double position push button(with light)</p>		SPB ₀ -PR435/D	<p>● ● 红/绿 R/G</p>	

型号及其含义 Model and implication



正常工作条件

- 1、周围空气温度为 $-5^{\circ}\text{C}\sim+40^{\circ}\text{C}$ ，24小时内其平均值不超过 $+35^{\circ}\text{C}$ 。
- 2、海拔高度：安装地点的海拔不超过2000m。
- 3、大气条件：最高温度为 $+40^{\circ}\text{C}$ 时，空气的相对湿度不超过50%，在较低的温度下可以允许有较高的相对湿度，例如 $+20^{\circ}\text{C}$ 时达90%。对由于温度变化偶尔产生的凝露应采取特殊的措施。
- 4、污染等级：3级
- 5、安装类别：II类

Normal working condition

1. Ambient air temperature: $-5^{\circ}\text{C}\sim+40^{\circ}\text{C}$, the average temperature: $\leq+35^{\circ}\text{C}$.
2. Altitude $\leq 2000\text{m}$.
3. Air condition when the highest temperature is $+40^{\circ}\text{C}$, relative humidity is no more than 50%, Allowed to have higher relative humidity under lower. For example, when $+20^{\circ}\text{C}$, the relative humidity is 90%, Furthermore, considering that it sometimes appears moderate condensation on product's surface.
4. Class of pollution: 3.
5. Class of installation: II.

主要技术参数(见表1、表2、表3) Main technological parameter (table 1、table 2、table 3)

表 Table 1

额定绝缘电压Ui(V)		380				
约定发热电流Ith(A)		10				
额定工作电压Ue(V)	AC-15	380	220	110	48	24
	DC-13	2.5	4.5	6	8	—
额定工作电流Ie(A)		—	0.3	0.6	1.3	2.5

表 Table 2

工频耐压 Withstand voltage	2500V Ac, 1分钟 Minute
触点电阻 Contact resistance	$\leq 50\text{m}\Omega$ (初始值) (Initial value)
机械寿命 Mechanical life	平头式、蘑菇头式100万次，带灯式30万次，其它10万次 Flat type、mushroom type 1000,000、double-heads type 300,000 AC 100,000
电寿命 Electrical life	平头式、蘑菇头式、双头式AC50万次，DC20万次，其余10万次。 Flat type、mushroom type、double-heads type AC 500,000 DC 200,000 other 200,000
防护等级 Level of protection	IP40

表 Table 3

额定电压 Rated voltage (V)	直接式 Direct type							电阻式 Resistance type	变压器式 Transformer type	
电光源 Light source	6	12	24	48	110	220	380	220	220	380
LED灯 LED light	√	√	√	—	—	—	—	—	√	√
氖灯 Neon lamp	—	—	—	—	√	√	√	√	—	—
白炽灯 Incandescent light	√	√	√	√	√	√	√	—	√	√

表 Table 4


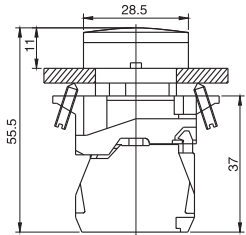

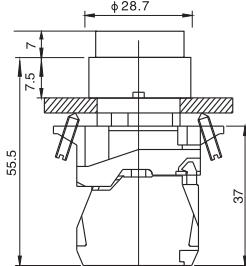

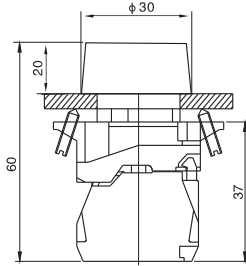

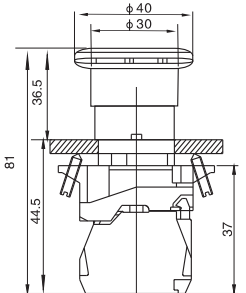
派生品种 Derivation type	规格代号 Size number	
A: 平钮 A: Flat button C: Φ40蘑菇头自复钮 C: Φ40 mushroom self-reset button L: 高位钮 L: High cap button P: 一般钮(带防护罩) P: Ush button(Atansparent silica gel cover)	1: 白 white 2: 黑 black 3: 绿 green 4: 红 red 5: 黄 yellow 6: 蓝 blue	1: 常开 NO 2: 常闭 NC 3: 二常开 two NO 4: 二常闭 two NC 5: 常开+常闭 NO+NC
S:蘑菇头自锁, 转动复位 S:Mushroom self-lock reset after turning	4: Φ30 5: Φ40 6: Φ60 1'' ⇄ 40(钥匙复位)	4: 红 red 2: 常闭 NC
D: 短柄旋钮 D: Short handle turn button J: 长柄旋钮 J: Long handle turn button G: 钥匙钮 G: Key button	2: 二位置锁定 Two position lock 3: 三位置锁定 Three position lock 4: 二位置复位 Self reset on the two position 5: 三位置复位 Self reset on the three position	1: 常开 NO 2: 常闭 NC 3: 二常开 Two NO 4: 二常闭 Two NC 5: 常开+常闭 NO+NC
W3: 带灯按钮 W3: Pushbutton with light	1: 白 white 5: 黄 yellow 3: 绿 green 6: 蓝 blue 4: 红 red	6: 直接式 6'' Flat type 1: 常开 NO 2: 常闭 NC 3: 二常开 Two NO 4: 二常闭 Two NC 5: 常开+常闭 NO+NC
L8: 双位按钮 L8: two position pushbutton W8: 双位带灯按钮 W8: Two position pushbutton with light	3: 一般钮 3'' Push button 4: 一般钮+高钮 4'' Push button+high button	6: 直接式 6'' Flat type 5: 常开+常闭 5'' NO+NC
V: 信号灯 V: Signal lamp	6: 直接式 6'' Flat type	1: 白 white 3: 绿 green 4: 红 red 5: 黄 yellow 6: 蓝 blue 7: 透明 clarity
K: 带灯旋钮 K: Turn button with light	2: 二位置锁定 Two position lock 3: 三位置锁定 Three position lock	1: 白 white 3: 绿 green 4: 红 red 5: 黄 yellow 6: 蓝 blue 1: 常开 NO 3: 二常开 Two NO 2: 常闭 NC 4: 二常闭 Two NC 5: 常开+常闭 NO+NC
BE: 附件(无结构分类号) Annex (no structure & class)	101: 常开接触组 NO contact group 102: 常闭接触组 NC contact group	

结构与性能

Structure & character


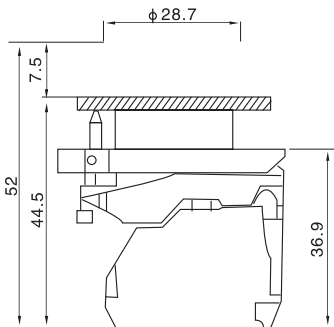

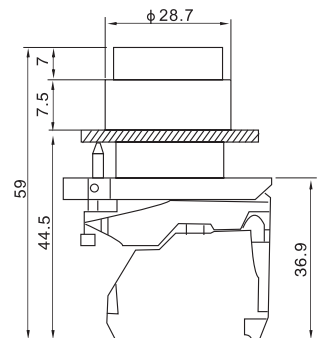

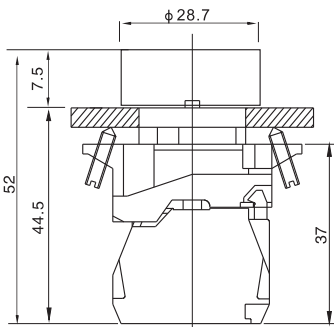

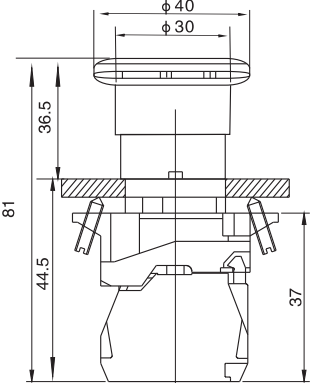
- | | |
|---|--|
| <p>1、金属式按钮采用防窜动操作头, 按钮不能从正面拆下;</p> <p>2、所有触点都有切换电路和自洁的双重作用, 在低电压和小电流(5V, 5mA)使用中仍然能保证接触的可靠性;</p> <p>3、常开与常闭接触组互相独立, 使用时可按需要进行组合, 便于更换;</p> <p>4、隐蔽式接线端子, 更加安全可靠。金属头式按钮操作头及其基座采用锌铝合金, 外型美观, 坚固;</p> <p>5、带灯按钮及信号灯统一采用BA9s灯座, 可按需要选用不同灯源。</p> | <p>1. Metal pushbutton use anti-drunkness operation head, you can't tear it down from front.</p> <p>2. All the contacts hae both functionsof alternatong circuit and self-cleanliness. It can keep stability in low-voltage and small current 15V, 5mA.</p> <p>3. No and NC contact group ane independant, you can conbinate them while using them.</p> <p>4. Connecting terminal are very safe. Metal operation pushbutton and it base are beautiful and firm because their materials are allumden.</p> <p>5. Pushbutton with light and indicator use Ba9s lamp holder, we can use different light source for different demand.</p> |
|---|--|



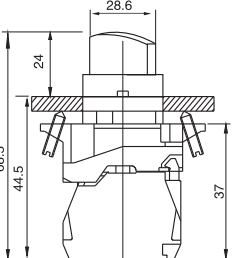


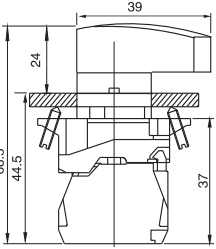


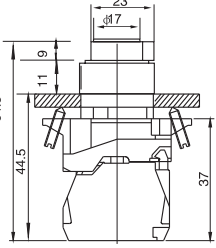

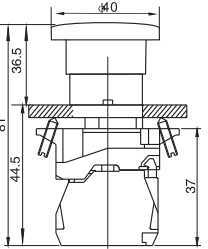
此系列产品已向中华人民共和国知识产权局申请专利实用新型 申请号为:200620138333.1 外观设计 申请号为:200630146076.1
This series of products has patented for utility model to the Knowledge product bureau of the People's Republic of China,the application numberis 200620138333.1
The appearance design application number is 200630146076.1



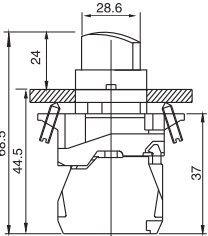

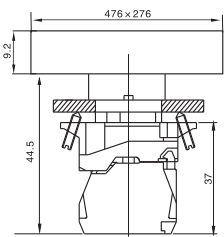

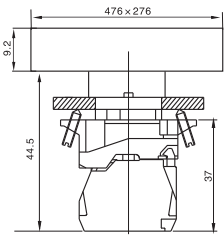

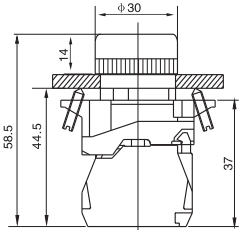
外形图 Outline	功能 Function	型号 Model	颜色 Color	外形尺寸 Overall dimension
 <p>一般按钮 Push button</p>	瞬动型 Instantaneous type	SPB ₁ -BA21 SPB ₁ -BA31 SPB ₁ -BA42 SPB ₁ -BA51 SPB ₁ -BA61 SPB ₁ -BA25 SPB ₁ -BA35 SPB ₁ -BA45	● 红 R ● 绿 G ● 黄 Y ● 蓝 B ○ 白 W ● 黑 K	
 <p>高位按钮 High-order button</p>	瞬动型 Instantaneous type	SPB ₁ -BL21 SPB ₁ -BL31 SPB ₁ -BL42 SPB ₁ -BL51 SPB ₁ -BL61 SPB ₁ -BL25 SPB ₁ -BL35 SPB ₁ -BL45	● 红 R ● 绿 G ● 黄 Y ● 蓝 B ○ 白 W ● 黑 K	
 <p>一般按钮(带防护罩) Push button (Atansparent silica gel cover)</p>	瞬动型 Instantaneous type	SPB ₁ -BP21 SPB ₁ -BP31 SPB ₁ -BP42 SPB ₁ -BP51 SPB ₁ -BP61 SPB ₁ -BP25 SPB ₁ -BP35 SPB ₁ -BP45	● 红 R ● 绿 G ● 黄 Y ● 蓝 B ○ 白 W ● 黑 K	
 <p>蘑菇按钮 Mushroom push button 自锁蘑菇按钮为推拉式</p>	瞬动型 Instantaneous type	SPB ₁ -BC21 SPB ₁ -BC31 SPB ₁ -BC42 SPB ₁ -BC51 SPB ₁ -BC61	● 红 R ● 绿 G ● 黄 Y	

说 明 Remarks

















1、如需自锁请在型号后加“T”；

外形图 Outline	功能 Function	型号 Model	颜色 Color	外形尺寸 Overall dimension
 <p>一般钮带标识 Push button With symbol logo</p>	<p>瞬动型 Instantaneous type</p>	<p>SPB₁-BA3311</p> <p>SPB₁-BA4322</p>	<p>● 绿 G</p> <p>● 红 R</p>	
 <p>一般钮带标识 Push button With symbol logo</p>	<p>瞬动型 Instantaneous type</p>	<p>SPB₁-BA3341</p> <p>SPB₁-BA3351</p>	<p>○ 白 W ↑OT↓</p> <p>● 黑 K ↑OT↓</p>	
 <p>带灯按钮 Push button with light</p>	<p>瞬动型 Instantaneous type</p>	<p>SPB₁-BA3361</p> <p>SPB₁-BA3462</p>	<p>● 红 R</p> <p>● 绿 G</p> <p>● 黄 Y</p> <p>● 蓝 B</p> <p>○ 白 W</p>	
 <p>紧急按钮 Emergency push button</p>	<p>按锁定， 顺时针，转复位 Push locking, in clockwise direction, move reset</p>	<p>SPB₁-BS542</p>	<p>不透明 Opacity</p> <p>● 红 R</p>	

外形图 Outline	功能 Function	型号 Model	颜色 Color		外形尺寸 Overall dimension
 <p>旋钮 Turn button</p>	二位置 Tow-position 三位置 Three-position	SPB ₁ -BD21 SPB ₁ -BD25 SPB ₁ -BD33	● 黑 K	手柄位置 Handle position 	
 <p>长柄旋钮 Turn button with long handle</p>	二位置 Tow-position 三位置 Three-position	SPB ₁ -BJ21 SPB ₁ -BJ25 SPB ₁ -BJ33	● 红 R ● 绿 G ● 黄 Y		
 <p>钥匙钮 Key button</p>	二位置 Tow-position 三位置 Three-position	SPB ₁ -BG21 SPB ₁ -BG25 SPB ₁ -BG33		取出位置 Removable position 	
 <p>钥匙紧急钮 Emergency push button with key</p>	按锁定, 顺时针, 钥匙旋转复位 Push locking, in clockwise direction, key turn to reset	SPB ₁ -BS142	● 红 R	a 或 au a 或 ao 或 au	

外形图	功能 Function	型号 Model	颜色 Color		外形尺寸 Overall dimension
 <p>带灯旋钮 Turn button with light</p>	自锁 Self-locking	SPB ₁ -BK21	● 红 R ● 绿 G ● 黄 Y	手柄位置 Handle position 	
 <p>双位按钮 Double push button</p>	瞬时型 Instantaneous type	SPB ₁ -BL8325	● / ● 红 / 绿 R / G		
 <p>双位带灯按钮 Double push button with light</p>	瞬时型 Instantaneous type	SPB ₁ -BW8365	● / ● 红 / 绿 R / G	灯电压 light voltage 21-DC.AC 6V 22-DC.AC 12V 23-DC.AC 24V 24-DC.AC 36V 25-DC.AC 48V 26-DC.AC 110V 27-DC.AC 127V 28-DC 220V 31-AC 220V 32-AC 380V	
 <p>信号灯 Indicator lamp</p>	信号灯 Indicator lamp	SPB ₁ -BV61 SPB ₁ -BV62 SPB ₁ -BV63 SPB ₁ -BV64 SPB ₁ -BV65	● 红 R ● 绿 G ● 黄 Y ● 蓝 B ○ 白 W	灯电压 light voltage 21-DC.AC 6V 22-DC.AC 12V 23-DC.AC 24V 24-DC.AC 36V 25-DC.AC 48V 26-DC.AC 110V 27-DC.AC 127V 28-DC 220V 31-AC 220V 32-AC 380V	

SPB2-BA 一般钮 SPB2-BA Push button	SPB2-BC 蘑菇钮 SPB2-BC Mushroom pushbutton	SPB2-BS 紧急钮 SPB2-BS Emergency push button	SPB2-BD 短柄旋钮 SPB2-BD Short handle knob	SPB2-BJ 长柄旋钮 SPB2-BJ Long handle tun button
 <p>SPB2-BA21 SPB2-BA31 SPB2-BA42 SPB2-BA51 SPB2-BA61</p>	 <p>SPB2-BC21 SPB2-BC31 SPB2-BC42 SPB2-BC51</p>	 <p>SPB2-BS542</p>	 <p>SPB2-BD21 SPB2-BD25 SPB2-BD33</p>	 <p>SPB2-BJ21 SPB2-BJ25 SPB2-BJ33</p>
SPB2-BG 钥匙钮 SPB2-BG Key push button	SPB2-BW3 带灯按钮 SPB2-BW3 Push button with light	SPB2-BV 信号灯 SPB2-BV Indicator lamp	SPB2-BW8 两位带灯按钮 SPB2-BW8 Two-position push button with light	SPB2-BE 附件 SPB2-BE Annex
 <p>SPB2-BG21 SPB2-BG25 SPB2-BG33</p>	 <p>SPB2-BW3361 SPB2-BW3461 SPB2-BW3561 SPB2-BW3371 SPB2-BW3471 SPB2-BW3571</p>	 <p>SPB2-BV63 SPB2-BV64 SPB2-BV65 SPB2-BV73 SPB2-BV74 SPB2-BV75</p>	 <p>SPB2-BW8465 SPB2-BW8475</p>	 <p>SPB2-BE101 SPB2-BE102</p>

一般钮 Push button	一般钮带标识 Push buttonWith synbol logo	一般钮带标识 Push button With synbol logo	一般钮(带防护罩) Push button(Atansparent silica gel cover)
 <p>SPB4-BA21 SPB4-BA31 SPB4-BA51 SPB4-BA61 SPB4-BA42</p>	 <p>SPB4-BA4322 SPB4-BA4342</p>	 <p>SPB4-BA3311 SPB4-BA3361</p>	 <p>SPB4-BP21 SPB4-BP31 SPB4-BP51 SPB4-BP61 SPB4-BP42</p>
短柄旋钮 Short handleTurn button	长柄旋钮 Long handleTurn button	高位钮 High push button	一般钮带标识 Push buttonWith synbol logo
 <p>SPB4-BD21 SPB4-BD25 SPB4-BD33</p>	 <p>SPB4-BJ21 SPB4-BJ25 SPB4-BJ33</p>	 <p>SPB4-BL21 SPB4-BL31 SPB4-BL51 SPB4-BL61 SPB4-BL42</p>	 <p>SPB4-BA3341 SPB4-BA3351</p>
高位钮带标识 High push buttonWith synbol logo	蘑菇钮 Mushroompush button φ 40	紧急钮 Turn to releasepush button φ 40	自锁按钮 Push-pullMotion touchingof φ 40
 <p>SPB4-BL4322 SPB4-BL4342</p>	 <p>SPB4-BC21 SPB4-BC31 SPB4-BC42</p>	 <p>SPB4-BS542</p>	 <p>SPB4-BT42</p>
钥匙钮 Key push button	带灯按钮 Push button with light	带标识不带灯双位钮 Marked without pilot light1 flush green push button 1 projecting red push button marked	信号灯 Indicator Light
 <p>SPB4-BG21 SPB4-BG25 SPB4-BG33</p>	 <p>SPB4-BW31M5 SPB4-BW33M5 SPB4-BW35M5 SPB4-BW36M5 SPB4-BW34M5</p>	 <p>SPB4-BL845 SPB4-BL945</p>	 <p>SPB4-BV41 SPB4-BV43 SPB4-BV44 SPB4-BV45 SPB4-BV46</p>

此系列型号含义等同于SKB1 The means of this type equal to SPB1

高强度抗破坏金属按钮产品特点与结构及性能

The high-intensity resistance to damage the metal push button product features and the structure and performance

LAY50系列金属按钮外观大方、安装方便、结构可靠；产品广泛应用于各类控制台、控制箱（柜）、配电箱（柜）、各类仪器仪表、精密机械、安防控制系统、消防控制系统等。

产品采用坚固耐用的金属操作头部，抗冲击性与抗震动性能更突出；材质有黄铜镀镍、不锈钢可选。

头部防护防水等级达到IP60以上，部分产品可达到IP65。

开关元件全部采用蠕动型结构设计，内含触点自洁功能，可靠性强。

LAY50 series of metal push buttons have generous appearance, easy installation, reliable structure; products are widely used in various types of consoles, control box (cabinet), power distribution box (cabinet), various types of instrumentation, precision machinery, security control systems, fire control systems, etc.

The product uses a rugged metal operating head, impact resistance and anti-vibration performance; material are made of brass nickel-plated, stainless steel optional.

Head protection waterproof rating reach IP60 or more, some products can reach IP65.

Switching elements used in all the peristaltic structural design, containing the contact self-cleaning function, high reliability.

型号及其含义 Model and implication

Diagram illustrating the breakdown of the product code **LAY50** into its components:

- LAY**: 按钮型号 (Shanghai Saipwell Electrical Co., Ltd.) Push Button type (Shanghai Saipwell Electrical Co., Ltd.)
- 50**: 安装尺寸 (Install dimension): $\phi 12, \phi 16, \phi 19, \phi 22, \phi 25$
- J**: 接线类型 (Connection type): J: pin w/o letter, wiring terminal
- Z**: 表示自锁 (Z: self-locking)
- B, F, H**: 头部形状 (The shape of head): B: 球形 (Spherical), F: 平圆形 (Flat circular), H: 高位平圆形 (High-position flat circular)
- D, E, U**: 带灯 (With light): D: 点型 (Point type), E: 环型 (Ring type), U: 无灯 (No light)
- 11, 22, 10, 01**: 触点 (Contact state): 11: 1NO1NC, 22: 2NO2NC, 10: 1NO, 01: 1NC
- Metal push button**: 金属按钮

主要技术参数 Main technological parameter

材料 Material	灯罩 lampshade	聚碳酸酯 Polycarbonate	面板厚度 Panel thickness	1~10mm	
	外壳 Shell	黄铜镀镍/不锈钢 Nickel-plated brass stainless steel	螺母扭矩 Nut torque	5~14Nm	
	基座 Base	PA66	操作压力 Operating pressure	约2N	
	灯珠类型 Lamp Bulb type	LED	操作行程 Operating stroke	约1.5mm	
灯珠参数 Lamp Bulb parameter	额定电压 Rated Vdtage	6V/12V/24V/36V	防护等级 Level of protection	IP65	
	额定电流 Rated Current	15mA	材料 Material	触点 Contacts	银合金 Silver alloy
	灯珠颜色 Color	R G Y O B W		按钮 Button	不锈钢/黄铜(镀镍) Stainless steel / brass (nickel plated)
	灯珠寿命 Life	50000小时		外壳 Shell	不锈钢/黄铜(镀镍) Stainless steel / brass (nickel plated)
接触电阻 Contact resistance	≤50mΩ	基座 Base		PA66	
绝缘电阻 Insulation resistane	≥1000MΩ				
绝缘强度 Insulating strength	2000VAC				
环境温度 Ambient temperature	-20℃~+85℃				
机械寿命 Mechanical life	50万次以上				
电气寿命 Electrical life	5万次				

φ 8、φ 12系列金属按钮

			
LAY50-8J-D	LAY50-12J-10B	LAY50-12J-10H	
			
LAY50-12J-10HE/J	LAY50-12J-10F/J	LAY50-12J-10H/J	

φ 16系列金属按钮

			
LAY50-16J-10H	LAY50-16J-10F	LAY50-16J-10B	LAY50-16J-D
			
LAY50-16J-11F/J	LAY50-16J-11HD/J	LAY50-16J-11FE/J	LAY50-16J-11H/J
			
LAY50-16J-11HE/J	LAY50-16J-10FD/J	LAY50-16J-10FE/J	LAY50-16J-10B/J

注：订货时带灯型请注明颜色、电压。

订货时如需自锁请注明

Note: Lamp type when ordering please specify color and voltage.

When ordering For more information please indicate the self-locking




φ 19系列金属按钮

				
LAY50-19J-11FD/J	LAY50-19J-11F/J	LAY50-19J-11FE/J	LAY50-19J-11H/J	LAY50-19J-10F
				
LAY50-19J-10B	LAY50-19J-10H	LAY50-19J-10F/J	LAY50-19J-11B/J	LAY50-19J-10H/J

φ 22系列金属按钮

			
LAY50-22J-11FE/J	LAY50-22J-11FZE/J	LAY50-22J-11FD/J	LAY50-22J-11FZD/J
			
LAY50-22J-11H/J	LAY50-22J-11F/J		

φ 25系列金属按钮

			
LAY50-25J-11FE/J	LAY50-25J-11FZE/J	LAY50-25J-11FD/J	LAY50-25J-11F/J

注：订货时带灯型请注明颜色、电压。

订货时如需自锁请注明

Note: Lamp type when ordering please specify color and voltage.

When ordering For more information please indicate the self-locking

型号及含义 Model and implication

LAY50 -- 1 2 -- 3 4 5 / 6 7 8 TH

表示常闭触头数 Indicates normally closed contact quantity

表示常开触头数 Indicates normally open contact quantity

表示头部形状, “Y” 为圆形, “F” 为方形, “J” 为矩形, “M” 为蘑菇型, “DF” 为大方形, “DJ” 为大矩形。

The shape of head end “Y” is circular; “F” is square; “J” is rectangle; “M” is mushroom model; “DF” is big square; “DJ” big rectangle

表示颈部尺寸, 用8、12、16表示, 单位mm

Indicates neck dimension, indicated by 8、12、16 unit mm.

按钮型号(由上海电器科学研究所发放, 上海斯普威尔电气有限公司专用)

Type (approved by Shanghai Electrical Appliance Scientific Research Institution, monopoly for Shanghai Saipwell Electrical Co., Ltd.)

性能特征 Performance feature(φ 16)

标准使用环境	周围温度: -25 ~ +55 (无结冰) 操作温度: 45 ~ 85%RH (无凝结)
接触电阻	≤50mΩ
绝缘电阻	≥100MΩ
触点与灯珠引脚之间	2000V交流50赫兹, 1分钟
同级端子之间	1000V交流50赫兹, 1分钟
不同电极端子之间	2000V交流50赫兹, 1分钟
耐振动性	50赫兹, 振幅约1.2mm
耐冲击性	大于10m/S ² (10G)
机械寿命	瞬动型按钮20万次, 其它10万次
电气寿命	瞬动型按钮10万次, 其它5万次
接线	焊接线直径: 2.0×0.8mm最大, 铜钱面积: 0.75mm ² 接线插: 2.8×0.5mm
防护等级	IP40密封型 (外加防护罩可达IP67)

触头额定值 Contact ratings(φ 16)

最大电压		AC/DC			
发热电流		3A			
工作电源		24V	110V	220V	
额定	AC	阻 性	2A	1.5A	1A
		感 性	2A	1A	0.7A
	DC	阻 性	1.0A	0.5A	0.2A
		感 性	0.7A	0.2A	0.1A
触点材料		镀金银触点			

LED性能特点 LEDperformance characteristics(φ 16)

工作电压	6V	12V	24V	110V	220V
允许电压波动	±5%	±5%	±10%	±20%	±20%
光源	LED	LED	LED	LED	LED
颜色	R、G、Y、B、W、PW、PG、	R、G	R、G		
工作电流	20mA	15mA	13mA	1.4mA	0.8mA
工作寿命	3万小时	3万小时	3万小时	3万小时	3万小时

性能特征 Performance feature(φ 8、φ 12)

	工作环境温度	-15~+55℃
	操作湿度	45~85%RH(无结露)
	接触电阻	≤50mΩ
	绝缘电阻	≥100mΩ
耐压	触点与灯珠端子之间	1500VAC
	同极端子之间	1000VAC
	不同电极端子之间	2000VAC
寿命	机械寿命	自复15万次，自锁10万次
	电气寿命最大电	10万次以上

开关额定值 Rated value of switch(φ 8、φ 12)


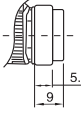


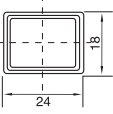
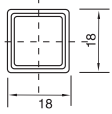

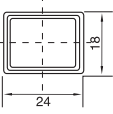
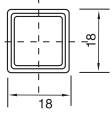
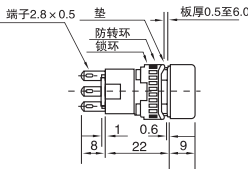

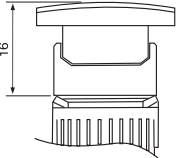
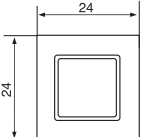
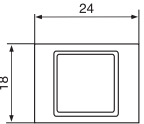
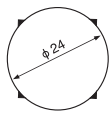

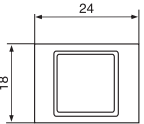
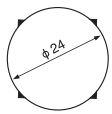

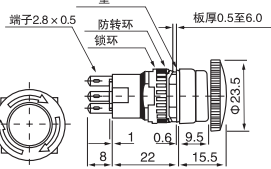
连续工作电流	Ith2 3A温度不超过最大额定值所允许的连续工作电流		
额定电压	24V	125V(110V)	250V(220V)
直流	1A	0.2A	0.1A
交流	P.F=1	1A	0.5A
	P.F=0.7	0.7A	0.5A

灯珠规格 Specification of light ball(φ 8、φ 12)










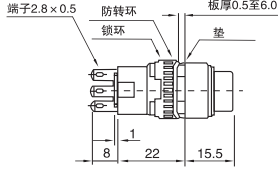
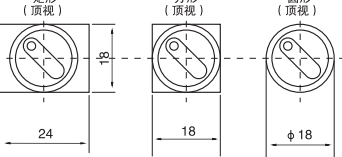









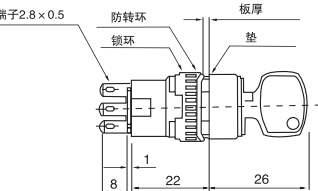
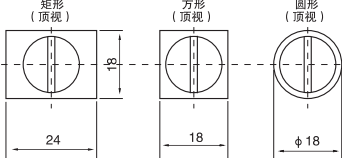
灯珠种类	LED灯珠			LED灯珠	
额定电压	AC/DC6V	AC/DC12V	AC/DC24V	AC/DC110V	AC/DC220V
发光颜色	红	LAS2D/6/R	LAS2D/12/R	LAS2D/12/R	LAS2D/110/R
	绿	LAS2D/6/G	LAS2D/12/G	LAS2D/12/G	LAS2D/110/G
	黄	LAS2D/6/Y	LAS2D/12/Y	LAS2D/12/Y	LAS2D/110/Y
	橙	LAS2D/6/A	LAS2D/12/A	LAS2D/12/A	LAS2D/110/A
	蓝	LAS2D/6/B	LAS2D/12/B	LAS2D/12/B	LAS2D/110/B
	白	LAS2D/6/W	LAS2D/12/W	LAS2D/12/W	LAS2D/110/W
外壳颜色	红	黄	白	红	白
寿命	约4000小时				

注: 灯珠内置保护电阻, 不需外接。其他电压规格可按要求定制。
Note: light ball is put inside, and is not needed to connect outside.
Other voltage specification can be made according with demand.

一般按钮、带灯按钮、指示灯、蘑菇按钮、紧急按钮
Common push button、Push button with light、indicator light、Emergency push button

功能 Function	型号 Model	灯电压 Light voltage	颜色 Color	
 圆形 Circular	指示灯 Pilot light LAY50-16AY-D LAY50-16AF-D LAY50-16AJ-D			 
 方形 Square	瞬动 Instantaneous type LAY50-16AY-□/□ LAY50-16AF-□/□ LAY50-16AJ-□/□			 
 矩形 Rectangular	自锁 Self-locking type LAY50-16AY-□T/□ LAY50-16AF-□T/□ LAY50-16AJ-□T/□	DC.AC 6V DC.AC 12V DC.AC 24V DC.AC 220V	● 红 R ● 绿 G ● 黄 Y ● 蓝 B ○ 白 W ● 黑 K 透明 T 注: 黑色按钮罩不用带灯 Note: black button cover is not used with light	  
 蘑菇按钮 Mushroom push button	瞬动 Instantaneous type LAY50-16AM-□/□ LAY50-16ADF-□/□ LAY50-16ADJ-□/□			   
 大方形 Big Square	自锁 Self-locking type LAY50-16AM-□T/□ LAY50-16ADF-□T/□ LAY50-16ADJ-□T/□		● 红 R ● 绿 G ● 黄 Y ● 蓝 B ○ 白 W ● 黑 K 透明 T 注: 黑色按钮罩不用带灯 Note: black button cover is not used with light	 
 大矩形 Big Rectangular	工作状态 Working state 按下锁定右旋复位 Press locking Reset right on the LAY50-16AY-□Z		● 红 R ● 绿 G	

旋钮、钥匙钮、蜂鸣器
Turn button、Key push button、Buzzer

	工作状态 Working state	型号 Model	颜色 Color	
<div><p>圆形 Circular</p></div> <div><p>方形 Square</p></div> <div><p>矩形 Rectangular</p></div>	<div><p>90° 二位置</p></div> <div><p>45° 三位置</p></div> <div><p>90° 二位置</p></div> <div><p>45° 三位置</p></div> <div><p>90° 二位置</p></div> <div><p>45° 三位置</p></div>	<div>LAY50-16AY-□X/□ LAY50-16AF-□X/□ LAY50-16AJ-□X/□</div> <div>LAY50-16AY-22XS/□ LAY50-16AF-22XS/□ LAY50-16AJ-22XS/□</div>	<div>● 红 R</div> <div>● 绿 G</div> <div>● 黑 B</div>	<div><p>端子2.8×0.5 防转环 锁环 板厚0.5至6.0 垫</p><p>8 1 22 15.5</p></div> <div><p>矩形 (顶视) 18 24 方形 (顶视) 18 圆形 (顶视) φ 18</p></div>
<div><p>圆形 Circular</p></div> <div><p>方形 Square</p></div> <div><p>矩形 Rectangular</p></div>	<div><p>90° 二位置</p></div> <div><p>45° 三位置</p></div> <div><p>90° 二位置</p></div> <div><p>45° 三位置</p></div> <div><p>90° 二位置</p></div> <div><p>45° 三位置</p></div>	<div>LAY50-16AY-□Y LAY50-16AF-□Y LAY50-16AJ-□Y</div> <div>LAY50-16AY-22YS LAY50-16AF-22YS LAY50-16AJ-22YS</div>	<div>● 钥匙取出位置 Key removable position</div> <div>二位置钥匙，钥匙在两个位置均可拔出。三位钥匙钮有两种类型： 1. 钥匙在中间位置可拔出； 2. 钥匙在三个位置均可拔出。 Key two-position, which can be taken out in two positions Key three-position has two types: 1. Key is taken out in middle 2. Key is all taken out in three positions</div>	<div><p>端子2.8×0.5 防转环 锁环 板厚 垫</p><p>8 1 22 26</p></div> <div><p>矩形 (顶视) 18 24 方形 (顶视) 18 圆形 (顶视) φ 18</p></div>



圆形
Circular
LAY50-15AY-B



方形
Square
LAY50-16AF-B



矩形
Rectangular
LAY50-16AJ-B

蜂鸣器分长音和间断音两种
音量:10CM/80分贝
电压范围:AC.DC 6V-48V
AC 110V-220V