

### HBY090 按钮开关系列



#### 型号说明 Model Explanation

系列号 Series Number	触点结构 Contact Configuration	操作类型 Operation Type	头部类型 Head type	操作位置 Operation Position	颜色 Color	带灯电压 LED Voltage	防护等级 Degree of Protection
HBY090 Ø22mm Ø25mm Ø30mm	10: 1NO 01: 1NC 11: 1NO1NC 22: 2NO2NC 33: 3NO3NC 44: 4NO4NC	无字母: 自复按钮 D: 指示灯 BD: 球形指示灯 G: 高头按钮 Z: 自锁按钮 X: 选择钮 XB: 长柄选择钮 Y: 钥匙钮 M: 蘑菇头按钮 TS: 急停钮 YM: 蘑菇头钥匙钮 NA: Momentary D: Indicator BD: Domed Indicator G: High head Pushbuttons Z: Latching X: Selector Switches XB: Long Handle Selector Switches Y: Key Switches M: Mushroom Head Pushbuttons TS: Emergency stop Switches YM: Mushroom Head Key Switches	S: 快速安装型 无字母: 普通型 S: Fast Installation type NA: Normal Type	◇选择钮及钥匙钮的操作类型 2: 二位置 3: 三位置 ◆动作类型 1: 自锁式 2: 右自复式 3: 全自复式 4: 左自复式  ◇Operation Position of Selector Switches and Key Switches 2: 2 Position 3: 3 Position ◆Operation type 1: Latching 2: Right Momentary 3: Momentary 4: Left Momentary	R Red G Green Y Yellow W White B Blue A Orange N Black	见LED灯珠规格表 See the table of LED Rating	无字母: IP40 FP: IP67 NA: IP40 P: IP67

#### 性能参数 Parameters

环境温度 Operating Temperature	-25℃~+55℃(无冰冻)照明开关本体周围必须空气流通 (No freezing) Keep the air flowing around illuminated pushbutton
环境湿度 Operating humidity	45~85%RH(无结露) Non condensing
触点材料 Contact material	银 Silver 银合金 Silver alloy 银镀金, 镀层厚3µm Silver plated gold, Plating thickness 3µm
接触电阻 Contact Resistance	≤50mΩ
绝缘电阻 Insulation Resistance	≥100MΩ
介电强度 Dielectric Strength	3000V, AC50Hz
耐振动性 Vibration Resistance	50Hz, 振幅约1.0mm Amplitude 1.0mm
耐冲击性 Shock resistance	>10g
机械寿命 Mechanical Life	自复钮 Momentary 100万次 1,000,000 times 自锁钮、选择钮 Latching button, Selector switch 50万次 500,000 times 钥匙钮、急停钮 Key switch, E-stop switch 20万次 200,000 times
电气寿命 Electrical Life	5万次以上 Above 50,000 times
接线 Terminal	螺纹连接, 线直径最大: 2×1.5mm² 接线插片 6.3×0.8mm² Thread connection, diameter of welded wire: 2×1.5mm² Max. Connecting link: 6.3×0.8mm²
操作力 Operating Force	800gf~2200gf, 依开关元件数量而定 800gf~2200gf according to the quantity of switch units
操作行程 Operating Travel	(按钮约)5.5mm (Buton) About 5.5mm

#### 开关额定值 Switch Rating

额定绝缘电压Ui Rated insulation voltage	AC600V					
发热电流Ith Conventional thermal current	10A					
额定电压 Rated Voltage	24V	48V	110V	220V	380V	500V
直流 DC	10A	5A	2.2A	1.1A		
交流 AC PF=0.7		10A	6A	4A	2A	

#### LED灯珠规格 LED Lamp Specifications

灯珠类型 Lamp Type	双向LED灯珠(交直流通用) Bi-directional LED lamp (AC DC Universal)		
带灯形式 illuminated form	灯珠式 LED type	电源箱式 Power box type	
额定电压 Rated Voltage	AC/DC6V, 12V, 24V	AC/DC110V, 220V, 380V AC110V, 220V, 380V	
额定电流 Rated Current	约20mA about 20mA		
发光颜色 Color	R G Y O B W		
寿命 Life	40000小时(参考值) 40000 hours (reference value)		
灯珠等效电路 Lamp Equivalent Circuit	AC/DC: (电阻降压) AC/DC: (Resistance for Step-down)  AC: (电容降压) AC: (Capacitor for Step-down)  适用频率: 50~60Hz		

注: 1、该系列发光元件的常规配置为60V以下采用灯珠式, 60V以上采用电源箱式; 如需特定制带灯形式的电压规格可定制。  
2、灯珠内置保护电阻, 不需外接。  
3、以上均采用交直流通用的双向LED灯珠, 如需直流单向可定制; 其他电压规格可按要求定制; 红绿变色可定制。

Note: 1. The normal configuration of the lamp is: using direct LED lamp if below 60V, using power box type if above 60V; other special voltage of illuminated type can be customized if you need.  
2. The lamp contains current-limiting resistor inside and doesn't need connect outside  
3. The standard is using AC/DC LED lamp. DC LED lamp, dual-color LED lamp and other Voltages can be customized.

#### 接线图 Contacts Circuit



### HBY090 Series Pushbutton Switches



#### 选择/钥匙钮触头分合状态图 The Contact pair's Close-open State Chart of the Selector and Key Switches

2位置触头组分合状态图  
The Contact Pairs's Close-open State Chart of 2-Position Selector and Key Switches

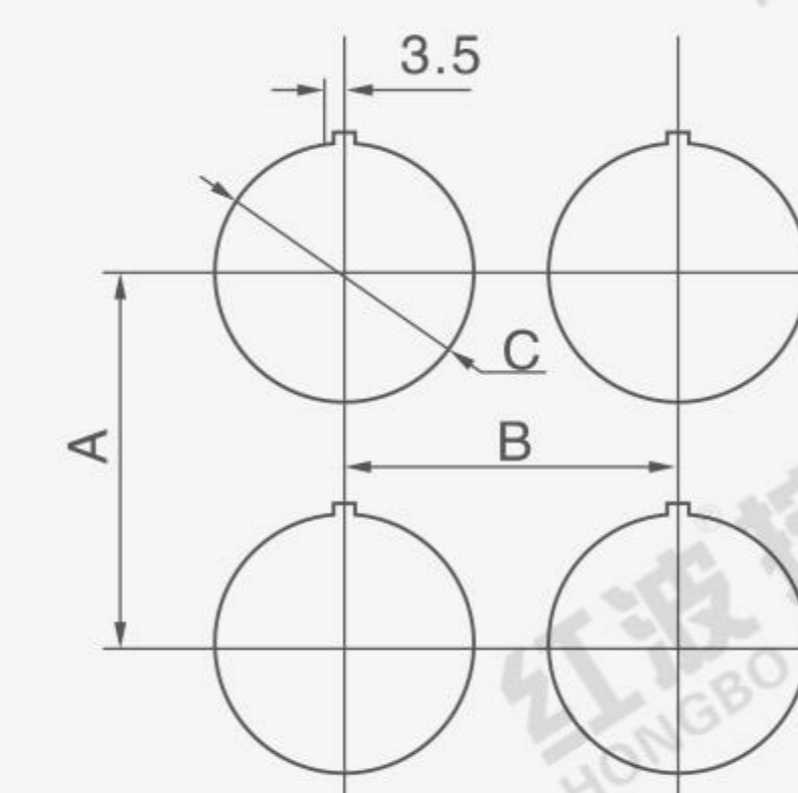
序号 No.	型号 Type		
1	HBY090-11		
2	HBY090-02		
3	HBY090-20		
4	HBY090-22		
5	HBY090-13		
6	HBY090-31		
7	HBY090-04		
8	HBY090-40		
9	HBY090-42		
10	HBY090-24		
11	HBY090-06		
12	HBY090-60		
13	HBY090-33		
14	HBY090-15		
15	HBY090-51		

3位置触头组分合状态图  
The Contact Pairs's Close-open State Chart of 3-Position Selector and Key Switches

序号 No.	型号 Type			
1	HBY090-11			
2	HBY090-02			
3	HBY090-20			
4	HBY090-22			
5	HBY090-13			
6	HBY090-31			
7	HBY090-04			
8	HBY090-40			
9	HBY090-42			
10	HBY090-24			
11	HBY090-06			
12	HBY090-60			
13	HBY090-33			
14	HBY090-15			
15	HBY090-51			

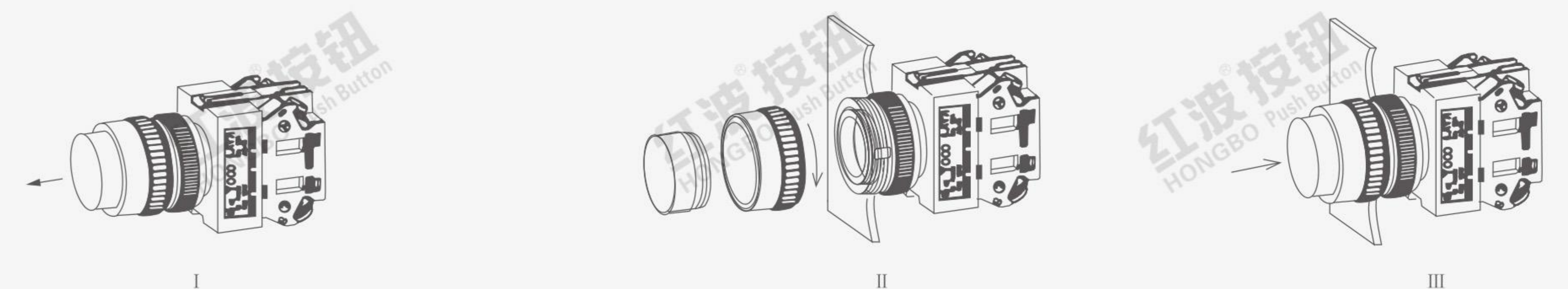
注: 1、 表示触头断开状态, 表示触头闭合状态;  
2、表示并未列出所有的触头分合状态, 如所需的触头状态不在表中, 请另行告之。  
Note: 1. express open state, express close state;  
2. Not all the contact state show in the table. If you need other contact state, please tell us

#### 安装孔尺寸 Mounting Hole Size



型号Model	A	B	C
按钮/钥匙钮 Pushbuttons/Key switches	≥50	≥40	Ø22.5
选择钮 Selector switches	≥55	≥40	Ø25.5
蘑菇头按钮 Mushroom head	≥50	≥50	Ø30.5
大蘑菇头按钮 Big Mushroom head	≥70	≥70	

#### 安装方法 Installation



1、将按钮罩用起子撬开, 将铝制螺母旋下。  
1. Take out the head with a starter, and unscrew the aluminum screw. Pushbuttons/Key switches

2、将开关下部套入面板孔内。  
2. Then put the switch into the panel's hole.

3、将螺母拧上, 然后将按钮罩嵌入。  
3. Screw the screw, then put the head onto the switch.