

SHINOHAWA

RoHS SGS CE ISO9001

按钮系列  
PUSH BUTTON SERIES



启动未来 分享精彩  
Share exciting start Future

## 型号及其含义 Mode and Meaning



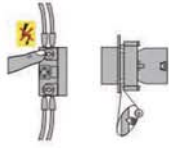
## ■ 使用环境条件 Working Environment

- 工作温度:  $-25 \sim +70^{\circ}\text{C}$   
Working environment temperature
- 储存温度:  $-40 \sim +70^{\circ}\text{C}$   
Storage temperature
- 污染等级: 3级  
Class of pollution
- 防护等级: IP40/IP65/IP66  
Protection grade: IP40/IP65/IP66
- 海拔极限高度:  $\leq 2000$ 米  
Limit height:  $\leq 2000$ 米
- 符合标准 Standard  
EN 60947-1, GB 14048.5

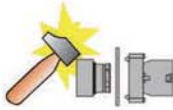
## ■ 主要技术参数 Main Technical Data

- 额定绝缘电压: 600V  
Rated insulation voltage
- 约定发热电流: 10A  
Rated thermal current
- 开关额定值: AC-15  $U_e: 380\text{V}/250\text{V}$ ,  $I_e=4.5\text{A}$   
Switch rating DC-13  $U_e: 220\text{V}/110\text{V}$ ,  $I_e=0.6\text{A}$
- 接触电阻:  $\leq 50\text{m}\Omega$   
Contact resistance
- 推荐扭力: 0.9Nm  
Recommended torque
- 接线面积: 最小(min)  $1 \times 0.5\text{mm}^2$ , 最大(Max)  $2 \times 1.5\text{mm}^2$  或(or)  $1 \times 2.5\text{mm}^2$   
Connectable area
- 机械寿命: 按钮(Pushbutton)  $\geq 300 \times 10^4$ 次(times);  
Mechanical life 旋钮(Selector Switch)  $\geq 1004$ 次(times);
- 急停按钮(Emergency Stop Pushbutton)  $\geq 30 \times 10^4$ 次(times)
- 电气寿命:  $\geq 30 \times 10^4$ 次  
Electrical life
- 灯电压极限:  $0.8U_e \leq U \leq 1.15U_e$   
Limit voltage(lamp)

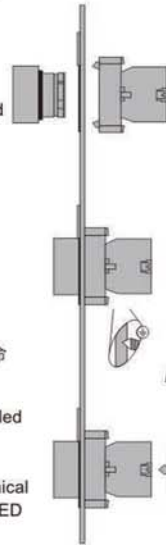
## 特点



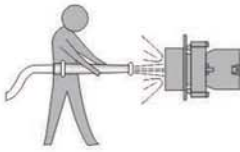
- 舒适的手指按压位置和开关拨动操作
- 功能识别
- 自动接地
- 防手指触电设计
- Comfortable finger press position and toggle switch
- Function identifying
- Automatic grounding
- Anti finger electric shock design



- 镀铬金属头和安装底座
- 防震的螺钉端子
- 坚固、可靠、长达3百万次的机械寿命  
长达5万小时的LED指示灯使用寿命
- Chrome plated metal head and installed base
- Shockproof screw terminals
- Soild, reliable and 3,000,000 mechanical life 50,000 hours working life of the LED indicator



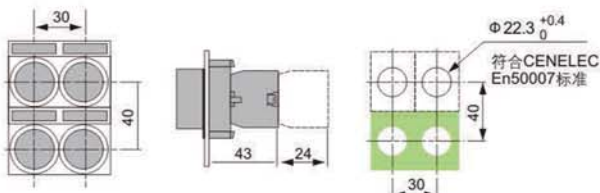
- 整体型号LA139A  
按钮头-触点底座组装  
按钮头自动保持在开孔中  
按钮头旋转一定角度，卡入触点底座
- Whole series with model number LA139A  
Push button head assembling with terminal base  
The push button head is automatically kept in the open hole  
Twist the button head to a certain angle, and then lock with the contacted base
- 2个金属螺钉固定  
防震  
自动接地  
敞开式接线端，无需预松螺钉
- Fixed with 2 metal screw  
Quake proof  
Automatic groudng  
No need to loose the screw first with the open-style connect part
- 电气功能  
最多可装6付触点模块
- Electrical function  
Can install 6 pairs connect unit at most



- 高防护等级IP65

安装快速简单，最终形式由您决定  
Easy to install, and the final form decided by you

安装开孔图(厚度1到6mm)  
Installation opening diagram  
(thickness 1-6mm)



- 面板表面最小
- 安装深度最浅
- The minimum surface of the plate
- The most shallow of the installed depth

注: LA139A塑料系列安装  
面板厚度1至5mm。  
The thickness of LA139A series installed plated is 1-5mm.



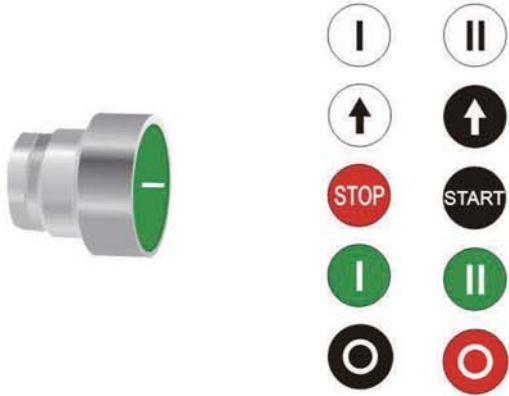
- 高防护等级IP65  
按钮头的安装
- 后端螺圈固定
- Protection degree: IP65
- The installation of the button head:  
The back part fixed by screw

- 触点底座卡式安装
- 无需任何工具
- 快捷、牢固

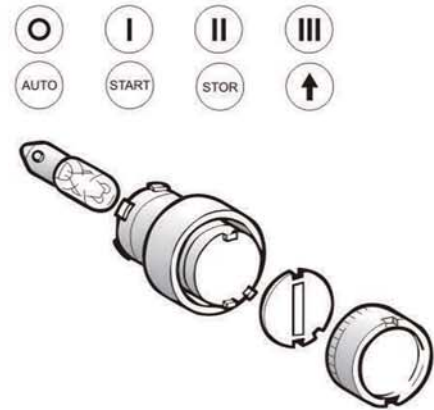
The connected base is cassette fixed

- Do not need any tool
- Fast and firm

齐全的标识标牌-为您量身定做带功能符号的按钮  
Complete symbol-making function symbol on the button according your special requirement



透明环形刻度板  
The transparent and ring form scale plate



标签标牌

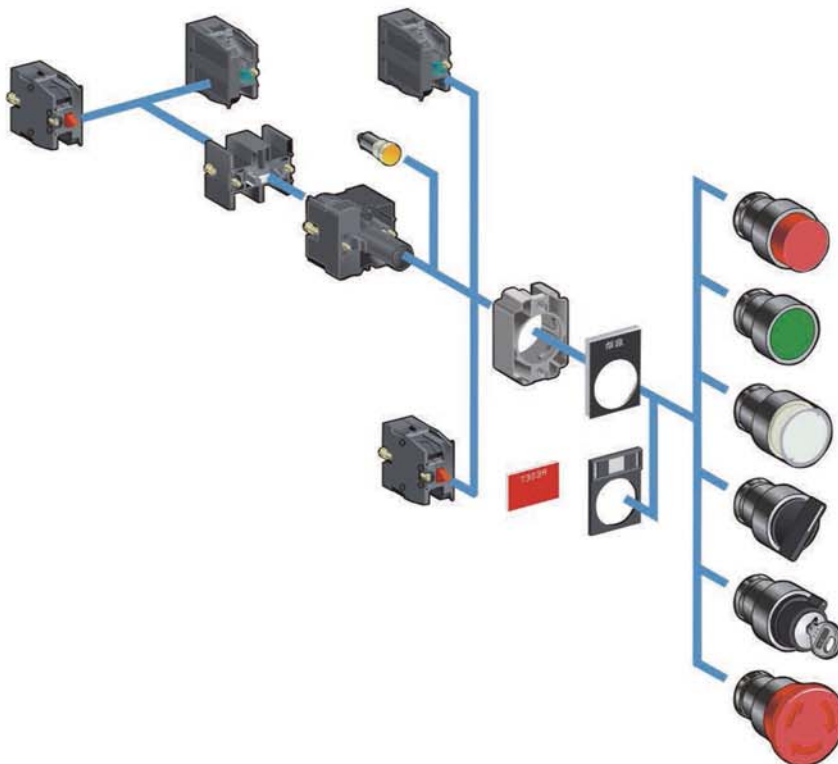


不同选择 Different choice

- ▶ 大小 Size
- ▶ 形状 Shape
- ▶ 颜色 color
- ▶ 文字 Writing

根据需要可任意定制  
Customizable as needed.

组成和附件 Constitute with enclosure



## 型号及其含义 Mode and Meaning

Example  
(示例):

LA139T

B: 金属系列  
Metal Series  
E: 塑料系列  
Plastic Series

颜色 Colour  
1: 白 White  
2: 黑 Black  
3: 绿 Green  
4: 红 Red  
5: 黄 Yellow  
6: 蓝 Blue

选择开关 Selector Switch BD BJ BG  
2: 二位自锁  
2-position (Maintained)  
3: 三位自锁  
3-position (Maintained)  
4: 二位由右至左自复  
2-position (Momentary, R to L)  
5: 三位由右至中和由左至中自复  
3-position (Momentary, R to C&L to C)  
6: 三位由右至中自复  
3-position (Momentary, R to C)  
7: 三位由左至中自复  
3-position (Momentary, L to C)

派生产品  
Derivative  
product  
BA 3: 带符号  
(仅限于BA, BL)  
BL With Mark  
(BA, BL Only)

触点模块  
Contact Block  
1: 1常开 1NO  
2: 1常闭 1NC  
3: 2常开 2NO  
4: 2常闭 2NC  
5: 1常开+1常闭  
1NO+1NC

A: 平头按钮  
Flush Pushbutton  
L: 凸头按钮  
Projecting Pushbutton  
P: 带罩按钮  
Pushbutton (Cover)  
W: 带灯按钮  
Pushbutton (Illuminated)  
D: 选择开关(短柄)  
Selector Switch (Short-handle)  
J: 选择开关(长柄)  
Selector Switch (Short-handle)  
G: 钥匙开关  
Key-operated  
E: 触点模块  
Contact Block  
Z: 触点模块加中座  
Contact Block+Holder




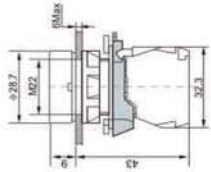











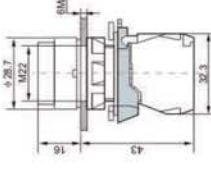











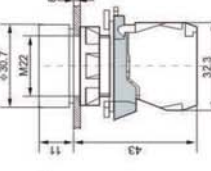












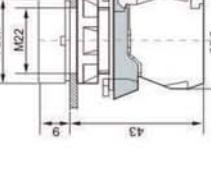











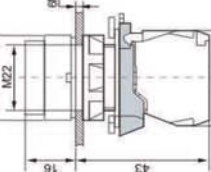












B: 蘑菇头按钮  $\Phi 30$  / Pushbutton, Mushroom( $\Phi 30$ )  
C: 蘑菇头按钮  $\Phi 40$  / Pushbutton, Mushroom( $\Phi 40$ )  
R: 蘑菇头按钮  $\Phi 60$  / Pushbutton, Mushroom( $\Phi 60$ )  
S4: 急停按钮(旋转释放,  $\Phi 30$ )  
Emergency Stop Pushbutton (Twist Release,  $\Phi 30$ )  
S5: 急停按钮(旋转释放,  $\Phi 40$ )  
Emergency Stop Pushbutton (Twist Release,  $\Phi 40$ )  
S6: 急停按钮(旋转释放,  $\Phi 60$ )  
Emergency Stop Pushbutton (Twist Release,  $\Phi 60$ )  
T: 急停按钮(拉拔释放)  
Emergency Stop Pushbutton (Pull Release)  
V: 指示灯 Pilot Light

## ■ 使用环境条件 Working Environment

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Working environment temperature
- 储存温度:  $-40 \sim +70^{\circ}\text{C}$   
Storage temperature
- 污染等级: 3级  
Class of pollution
- 防护等级: IP40/IP65/IP66  
Protection grade: IP40/IP65/IP66
- 海拔极限高度:  $\leq 2000$ 米  
Limit height:  $\leq 2000$ 米
- 符合标准 Standard  
EN 60947-1, GB14048.5

## ■ 主要技术参数 Main Technical Data

- 额定绝缘电压: 600V  
Rated insulation voltage
- 约定发热电流: 10A  
Rated thermal current
- 开关额定值: AC-15  $U_e: 380\text{V}/250\text{V}, I_e=4.5\text{A}$   
Switch rating DC-13  $U_e: 220\text{V}/110\text{V}, I_e=0.6\text{A}$
- 接触电阻:  $\leq 50\text{mA}$   
Contact resistance
- 推荐扭力: 0.9Nm  
Recommended torque
- 接线面积: 最小(min)  $1 \times 0.5\text{mm}^2$ , 最大(Max)  $2 \times 1.5\text{mm}^2$  或(or)  $1 \times 2.5\text{mm}^2$   
Connectable area
- 机械寿命: 按钮(Pushbutton)  $\geq 300 \times 10^4$ 次(times);  
Mechanical life 旋钮(Selector Switch)  $\geq 1004$ 次(times);
- 急停按钮(Emergency Stop Pushbutton)  $\geq 30 \times 10^4$ 次(times)
- 电气寿命:  $\geq 30 \times 10^4$ 次  
Electrical life
- 灯电压极限:  $0.8U_e \leq U \leq 1.15U_e$   
Limit voltage (lamp)

产品图片 Photo	描述 Description	触点模式 Contact	型号 Type	颜色 Color	外形尺寸 Contour
 LA139T-EA42	Flush Button Spring Return Momentary 平钮 弹簧返回 自复型	1NO  13 14	LA139T-EA11		
		1NO  13 14	LA139T-EA31		
		1NO + 1NC  13 14 21 22	LA139T-EA55		
		1NO  13 14	LA139T-EA61		
		1NC  21 22	LA139T-EA42		
 LA139T-EL31	Projecting button Spring Return Momentary 凸钮 弹簧返回 自复型	1NO  13 14	LA139T-EL11		
		1NO  13 14	LA139T-EL31		
		1NO + 1NC  13 14 21 22	LA139T-EL55		
		1NO  13 14	LA139T-EL61		
		1NC  21 22	LA139T-EL42		
 LA139T-EP42	Flush Button Spring Return Momentary (with water- proof cover) Unmarked IP 65 平钮(防水罩) 弹簧返回	1NO  13 14	LA139T-EP11		
		1NO  13 14	LA139T-EP21		
		1NO  13 14 + 1NO  13 14	LA139T-EP33		
		1NO  13 14	LA139T-EP61		
		1NC  21 22	LA139T-EP42		
 LA139T-EA4342	Flush Button Momentary Spring Return Marked 平钮(带符号) 弹簧返回 自复型	1NO  13 14	LA139T-EA3311		
		1NO  13 14	LA139T-EA3341		
		1NO  13 14	LA139T-EA3351		
		1NO  13 14	LA139T-EA5331		
		1NC  21 22	LA139T-EA4322		
 LA139T-EL3311	Projecting button Momentary Spring Return Marked 凸钮(带符号) 弹簧返回 自复型	1NO  13 14	LA139T-EL3311		
		1NO  13 14	LA139T-EL3361		
		1NO  13 14	LA139T-EL3341		
		1NO  13 14	LA139T-EL3351		
		1NO  13 14	LA139T-EL5331		
		1NC  21 22	LA139T-EL4322		
		1NC  21 22	LA139T-EL4342		

## Explanation of Type Designation(型号命名方式解释)

Example  
(示例):

LA139T

-

EA

11

T

LA139T Series  
LA139T 系列

EA Flush Pushbutton(Momentary)  
平钮(自复型)

EL Extended Pushbutton(Momentary)  
凸钮(自复型)

EP Flush Pushbutton(Cover)(Momentary)  
平钮(自复型,带防水罩)

EC Pushbutton,Mushroom(Momentary,Φ40)  
蘑菇头按钮(自复型,Φ40)

1= 

2= 

3= 

4= 

5= 

6= 

331 

336 

432 

533 

334 

335 

434 

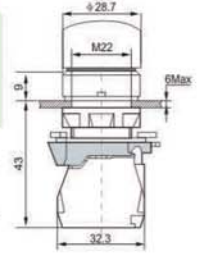
434 

1 = 1NO  
2 = 1NC  
3 = 2NO  
4 = 2NC  
5 = 1NO+1NC



90° 二位 Two-position  
45° 三位 Three-position

自锁 Maintained	自复位 Momentary from R to L spring return	触点模式 Contact
LA139T-ED21	LA139T-ED41	1NO 13 14
LA139T-ED22	LA139T-ED42	1NC 21 22
LA139T-ED25	LA139T-ED45	1NO + 1NC 13 14 21 22

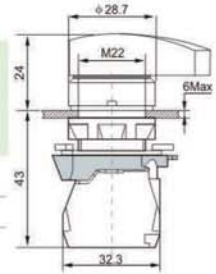


自锁 Maintained	自复位 Momentary From L to C From R to C Spring return	自复位 Momentary from L to C spring return	自复位 Momentary from R to C spring return	触点模式 Contact
LA139T-ED33	LA139T-ED53	LA139T-ED63	LA139T-ED73	1NO + 1NO 13 14 13 14
LA139T-ED35	LA139T-ED55	LA139T-ED65	LA139T-ED75	1NO + 1NC 13 14 21 22



90° 二位 Two-position  
45° 三位 Three-position

自锁 Maintained	自复位 Momentary from R to L spring return	触点模式 Contact
LA139T-EJ21	LA139T-EJ41	1NO 13 14
LA139T-EJ22	LA139T-EJ42	1NC 21 22
LA139T-EJ25	LA139T-EJ45	1NO + 1NC 13 14 21 22

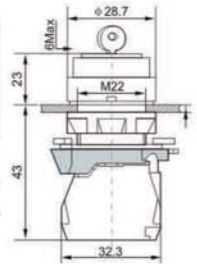


自锁 Maintained	自复位 Momentary From L to C From R to C Spring return	自复位 Momentary from L to C spring return	自复位 Momentary from R to C spring return	触点模式 Contact
LA139T-EJ33	LA139T-EJ53	LA139T-EJ63	LA139T-EJ73	1NO + 1NO 13 14 13 14
LA139T-EJ35	LA139T-EJ55	LA139T-EJ65	LA139T-EJ75	1NO + 1NC 13 14 21 22










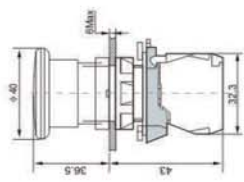



















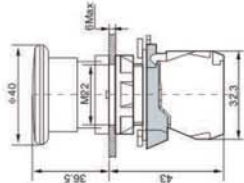



90° 二位 Two-position  
45° 三位 Three-position

自锁 Maintained	自复位 Momentary from R to L spring return	触点模式 Contact
LA139T-EG21	LA139T-EG41	1NO 13 14
LA139T-EG22	LA139T-EG42	1NC 21 22
LA139T-EG25	LA139T-EG45	1NO + 1NC 13 14 21 22






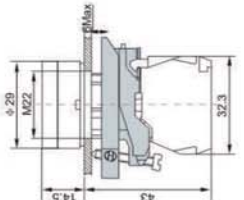











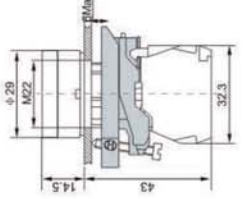





自锁 Maintained	自复位 Momentary From L to C From R to C Spring return	自复位 Momentary from L to C spring return	自复位 Momentary from R to C spring return	触点模式 Contact
LA139T-EG33	LA139T-EG53	LA139T-EG63	LA139T-EG73	1NO + 1NO 13 14 13 14
LA139T-EG35	LA139T-EG55	LA139T-EG65	LA139T-EG75	1NO + 1NC 13 14 21 22

备注:   为二位选择开关,   为三位选择开关。  
note:   Standand handle 2 position,   Standand handle 3 position.

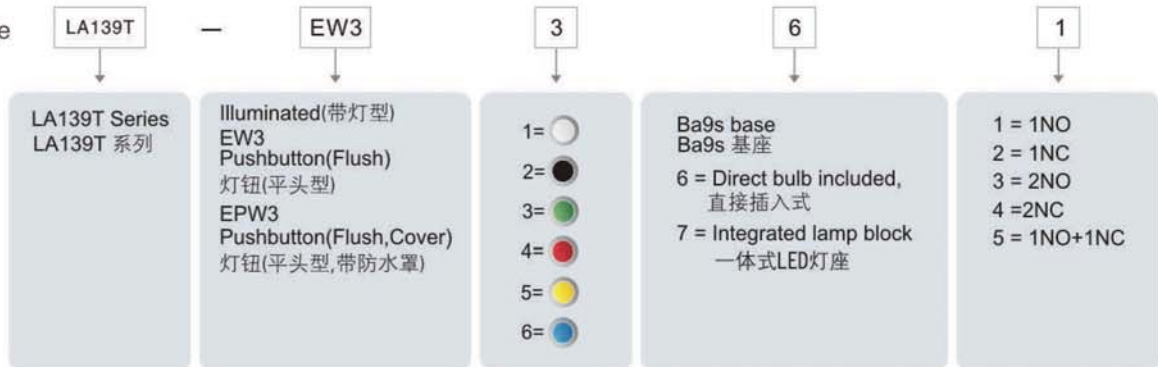
产品图片 Photo	描述 Description	触点模式 Contact	型号 Type	颜色 Color	外形尺寸 Contour	
 LA139T-EC21	Pushbutton, Mushroom Spring Return Momentary 蘑菇头按钮 弹簧返回 自复型 Φ40 Φ60	1NO  13 14 1NO  13 14 1NC  21 22	LA139T-EC21 LA139T-EC31 LA139T-EC42	  		
		1NO  13 14 1NO  13 14 1NC  21 22	LA139T-ER21 LA139T-ER31 LA139T-ER42	  		
		1NC  21 22	LA139T-ES542			
		1NO + 1NC  13 14  21 22	Twist Release 旋转释放	LA139T-ES545 		
		1NC  21 22	Key Release 钥匙旋转释放	LA139T-ES142		
		1NO + 1NC  13 14  21 22		LA139T-ES145		
 LA139T-ET42 Φ40	Pull Release 拉拔释放	1NC  21 22	LA139T-ET42			
		1NO + 1NC  13 14  21 22	LA139T-ET45			

### Explanation of Type Designation(型号命名方式解释)

Example (示例):	LA139T	—	ES5	4	2	
	↓		↓	↓	↓	
LA139T Series LA139T 系列	ES5	Emergency stop Pushbutton(Twist Release Φ40) 急停按钮 (旋转释放, Φ40)	ES1	Emergency stop Pushbutton(Key Release Φ40) 急停按钮 (钥匙旋转释放, Φ40)	ET	Emergency stop Pushbutton(Pull Release Φ40) 急停按钮 (拉拔释放, Φ40)
				2 = Black(黑) 4 = Rad(红)	1 = 1NO 2 = 1NC 3 = 2NO 4 = 2NC 5 = 1NO+1NC	

产品图片 Photo	描述 Description	触点模式 Contact	型号 Type	颜色 Color	外形尺寸 Contour
	Direct Supply 12~240V Ba9s Bulb (LED/Neon) 直接插入方式 提供12~240V灯泡	1NO 	LA139T-EW3361		
		1NO + 1NC 	LA139T-EW3565		
		1NO 	LA139T-EW3661		
		1NC 	LA139T-EW3462		
		1NO 	LA139T-EPW3361		
	Direct Supply 12~240V Ba9s Bulb (LED/Neon) with water-proof cover 直接插入方式 提供12~240V灯泡 带防水帽	1NO 	LA139T-EPW3565		
		1NO + 1NC 	LA139T-EPW3661		
		1NO 	LA139T-EPW3462		
		1NC 	LA139T-EPW3462		

## Explanation of Type Designation(型号命名方式解释)

Example  
(示例):

产品图片 Photo	描述 Description	触点模式 Contact	型号 Type	颜色 Color	外形尺寸 Contour
	LED指示灯 φ22 Indicator	AC/DC	AD60-22A/R △		
		6V 12V	AD60-22A/G △		
		24V 36V	AD60-22A/Y △		
		48V 110V	AD60-22A/B △		
		127V 220V	AD60-22A/W △		
		380V			
AD60-22A					
	φ22 Pilot Light 指示灯	AC/DC	AD60-22BS/R △		
		6V 12V	AD60-22BS/G △		
		24V 36V	AD60-22BS/Y △		
		48V 110V	AD60-22BS/B △		
		127V 220V	AD60-22BS/W △		
		380V			
AD60-22BS					
	φ22 Pilot Light 指示灯	AC/DC	AD60-22B/R △		
		6V 12V	AD60-22B/G △		
		24V 36V	AD60-22B/Y △		
		48V 110V	AD60-22B/B △		
		127V 220V	AD60-22B/W △		
		380V			
AD60-22B					
	φ22 Pilot Light 指示灯	AC/DC	AD60-22CS/R △		
		6V 12V	AD60-22CS/G △		
		24V 36V	AD60-22CS/Y △		
		48V 110V	AD60-22CS/B △		
		127V 220V	AD60-22CS/W △		
		380V			
AD60-22CS					
	φ22 Pilot Light 指示灯	AC/DC	AD60-22DS/R △		
		6V 12V	AD60-22DS/G △		
		24V 36V	AD60-22DS/Y △		
		48V 110V	AD60-22DS/B △		
		127V 220V	AD60-22DS/W △		
		380V			
AD60-22DS					

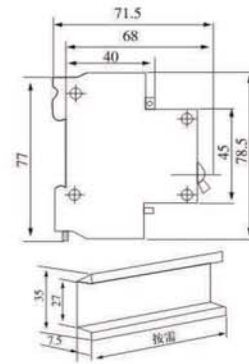
注:△为电压, ▲为颜色。

产品图片 Photo	描述 Description	触点模式 Contact	型号 Type	颜色 Color	外形尺寸 Contour
	φ22 Buzzer 蜂鸣器	AC/DC 6V 12V 24V 36V 48V 110V 127V 220V 380V AC 127V	AD60-22DS/B ▲	●	
	φ22 Ultra-short flashing buzzer 闪光蜂鸣器	AC/DC 6V 12V 24V 36V 48V 110V 127V 220V 380V AC 127V	AD60-22DS/F ▲	● ● ●	
	φ22 Buzzer 蜂鸣器	AC/DC 6V 12V 24V 36V 48V 110V 127V 220V 380V AC 127V	AD60-22D/B ▲	●	
	φ22 Flashing buzzer 闪光蜂鸣器	AC/DC 6V 12V 24V 36V 48V 110V 127V 220V 380V AC 127V	AD60-22D/F ▲	● ● ●	
	φ30 Buzzer 蜂鸣器	AC/DC 6V 12V 24V 36V 48V 110V 127V 220V 380V AC 127V	AD60-30DS/B ▲	●	
	φ30 Ultra-short flashing buzzer 闪光蜂鸣器	AC/DC 6V 12V 24V 36V 48V 110V 127V 220V 380V AC 127V	AD60-30DS/F ▲	● ● ●	

注:▲为电压, ▲为颜色。

## 导轨式信号灯型号说明 Model &amp; Explanation

## ■ 外形尺寸 External dimensions



AD60-D1R△□

AD60-D1G△□

AD60-D1Y△□

AD60-D1B△□

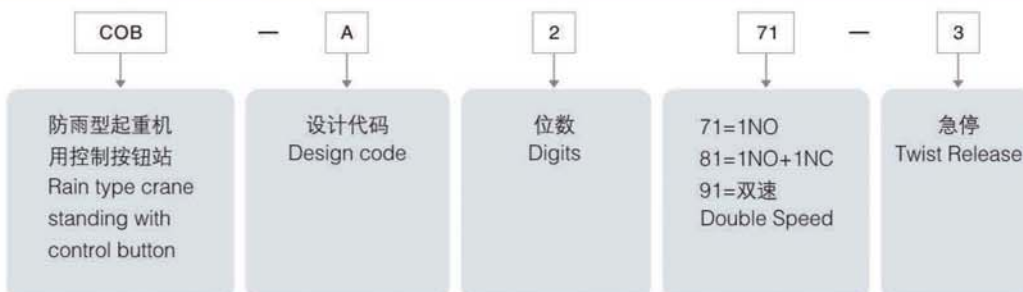
AD60-D1W△□

## ■ 概述 Product Overview

COB系列防雨型起重机用控制按钮站，是吸取了国内外同类产品的特长，最新开发的产品。其余塑外壳、美观、坚固、握持轻巧；结构合理、先进、触头容量大；正反方向控制能机械互锁，必要时，还可实现电路互锁，使用更安全、可靠，能采用不同功能开关及排列组成满意的按钮站；配置橡胶电缆护套和防水密封条，具有良好的(IP65级)防尘雨淋性能，所以本产品特别适用于露天、有雨雪、多尘埃侵害环境及人手潮湿的操作的场所，如电动葫芦，露天的物料输送带、建筑行业电器设备的远距离控制。

COB series of rain-proof crane control pushbutton station is drawing on the expertise of similar products at home and abroad, the latest development of the product. The remaining plastic shell, beautiful, strong, lightweight grip; reasonable structure, advanced, contact capacity; mechanical interlocking positive and negative direction of control can, if necessary, but also achieve interlock circuit, the use of more secure, reliable, and can adopt different Function switches and buttons arranged in form satisfactory station; configuration cable jacket and waterproof rubber sealing strip, has a good (IP65 level) performance of dust and rain, so this product is especially suitable for open-air, rain and snow, dust more against the environment Operations and staffing damp places, such as electric hoist, open-air conveyor belt materials, building remote control electrical equipment industry.

## 型号及其含义 Mode and Meaning



## 按钮标记 Button labeled



# *Analog Meter*



**SHINOHAWA®**

## Electromagnetic Series Moving-iron Type Square Meter



### AC Ammeter

Type: S96-A \ S72-A \ S48-A  
S80-A \ S120-A

**Specification:**

Directly connected type, AC 0.5A~20A, accuracy class 1.5

Directly connected type, AC 30A~100A, accuracy class 2.5

AC 10A~10kA should externally connect a CT of secondary current 1A or 5A, accuracy class 1.5

**Advantage:**

All the meter dials are screen printed. For different mutual inductor ratios, the corresponding mete dials can be interchanged if the secondary current are same. And the accuracy class is same.



### AC Voltmeter

Type: S96-V \ S72-V \ S48-V

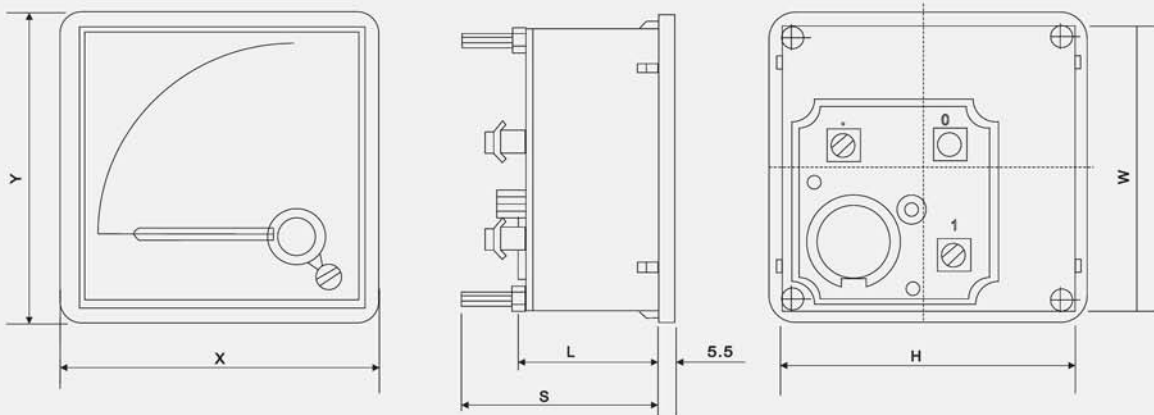
**Spification:**

Directly connected type, AC 100V~750V

AC 1kV~35kV should externally connect a PT of secondary voltage 100V

Accuracy class: 1.5

### Contour and Installation Drawing of Square Meter



### Square Hz Meter



#### Hz (Frequency) Meter

Type: HP-F96-3 \ HP-F72-3 \ HP-F48-3

Voltage: 50V \ 100V \ 220V \ 380V \ 415V \ 440V  
Frequency: 45~55Hz \ 45~65Hz \ 55~65Hz  
Accuracy class: 1.0



#### Hz (Frequency) Meter

Type: HP-F96-6 \ HP-F72-6 \ HP-F48-6

Voltage: 50V \ 100V \ 220V \ 380V \ 415V \ 440V  
Frequency: 45~55Hz \ 45~65Hz \ 55~65Hz  
Accuracy class: 1.0



#### Hz /rpm Meter

Type: HP-R96-3 \ HP-R72-3

Voltage: 50V \ 100V \ 220V \ 380V \ 415V \ 440V  
Frequency: 45~55Hz \ 45~65Hz \ 55~65Hz/rpm  
Accuracy class: 1.0



#### Vibrating Reed Hz (Frequency) Meter

Type: HP-R96 \ HP-R72 (single row)

Voltage: 50V \ 100V \ 220V \ 380V \ 415V \ 440V  
Frequency: 45~55Hz \ 45~65Hz  
Accuracy class: 1.0

Note: this vibrating reed Hz meter is single row horizontal, which is used to measure the frequency of power grid.

## Square Customized Ammeter



### Single structure

Type: S96-MD

Specification :

To measure the average maximum current value of 8min. or 15 min. or 30 min.

8 min. 5A or 1A

15 min. 5A or 1A

30 min. 5A or 1A

Advantage:

1. to measure and indicate the maximum average load of 8min., 15min., or 30min. It uses the red color pointer to indicate the maximum demand, and the maximum demand indicated pointer can be reset by zero reset button.

2. the meter dials can be replaced: all the meter dials are screen printed. For different mutual inductor ratios, the corresponding meter dials can be interchanged if the input measuring signals are same. And the accuracy class is same.

### Dual structure

Type: HP-2M96

Specification :

To measure the average maximum current value of 8min. or 15 min. or 30 min.

8 min. 5A or 1A

15 min. 5A or 1A

30 min. 5A or 1A

Accuracy class: for demand meter, 3. 0

for instantaneous ammeter, 1. 5

Advantage:

1. to measure and indicate the maximum average load of 8min., 15min., or 30min. It uses the red color pointer to indicate the maximum demand, and the maximum demand indicated pointer can be reset by zero reset button.

2. the meter dials can be replaced: all the meter dials are screen printed. For different mutual inductor ratios, the corresponding meter dials can be interchanged if the input measuring signals are same. And the accuracy class is same.



### Anti-explosion Meter

Type: HP-E96-3 \ HP-E72-3 \ HP-E48-3

Specification:

AC 10A~10kA should externally connect a CT of second-ary current 1A or 5A

Frequency: 50Hz ~ 60Hz

Accuracy class: 1.5

Power consumption <0.45VA

Advantage:

All the meter dials are screen printed. For different mutual inductor ratios, the corresponding meter dials can be interchanged if the secondary current are same. And the accuracy class is same.



### Square Power Factor and Power Meter



#### COS $\phi$ (Power Factor) Meter

Type: S96-COS \ S72-COS \ S48-COS

Voltage:

Three-phase, 100V \ 220V \ 380V \ 415V \ 440V \ 5A or 1A

Single phase, 100V \ 220V \ 380V \ 415V \ 5A or 1A

Frequency: 45Hz~65Hz

Specification: 0.5cap-1-0.5ind

Accuracy class: 2.5

Advantage:

All the meter dials are screen printed. If it is equipped with mutual inductor, which secondary current is 5A or 1A, then this meter is used in the single phase or three-phase circuits.



#### COS $\phi$ (Power Factor) Meter

Type: HP-R96-6 \ HP-R72-6 \ HP-R48-6

Voltage:

Three-phase, 100V \ 220V \ 380V \ 415V \ 440V \ 5A or 1A

Single phase, 100V \ 220V \ 380V \ 415V \ 5A or 1A

Frequency: 45Hz~65Hz

Specification: 0.5cap-1-0.5ind

Accuracy class: 2.5

Advantage:

All the meter dials are screen printed. If it is equipped with mutual inductor, which secondary current is 5A or 1A, then this meter is used in the single phase or three-phase circuits.



#### W (Power) Meter

Type: S96-KW \ S72-KW \ S48-KW

Voltage:

Single phase, 100V \ 220V

Three-phase three-wire, 100V \ 220V \ 380V \ 415V \ 440V

Three-phase four-wire, 58V(100V) \ 220V(380V) \ 240V(415V)

All the above voltage are connected directly.

For the higher voltage, it should be equipped with a PT of secondary voltage 100V.

Current: 5A or 1A

For the higher current, it should be equipped with a CT of secondary current 5A or 1A.

Frequency range: 45Hz~65Hz

Accuracy class: 1.5

Note: this meter is internally installed with or externally connected an active or reactive power transverte. It is divided into single phase, three-phase three-wire, three-phase four-wire active and reactive power meters, which is used in the balanced load and unbalanced load circuits.

## Magnetolectric Series Moving-coil Type Rectangular Meter (Improved Type)



### DC Ammeter

Type: S-TH80 \ S-TH60 \ S-TH670

#### Specification:

Directly connected type, DC 50 $\mu$ A~500 $\mu$ A

Directly connected type, DC 1mA~500mA

Directly connected type, DC 1A~30A

DC 15~3kA should externally connect a 75mV, 60mV or 50mV shunt

Accuracy class: 1.5



### DC Voltmeter

Type: S-TH80 \ S-TH60 \ S-TH670

#### Specification:

Directly connected type, DC 3V~600V

DC 1kV~3kV should externally connect a rated value resistor  
(rated current is 5mA or 1mA)

Accuracy class: 1.5

## Magnetolectric Series Moving-coil Type Rectangular Meter



### AC Ammeter

Type: HP-L80A-2 \ HP-L670A-2 \ HP-L60A-2 \ HP-L50A-2

#### Specification:

Directly connected type, AC 0.5A~20A, accuracy class 1.5

Directly connected type, AC 30A~50A, accuracy class 2.5

AC 10A~10kA should externally connect a CT of secondary current  
1A or 5A, accuracy class 2.5



### AC Voltmeter

Type: HP-L80V-2 \ HP-L670V-2 \ HP-L60V-2

#### Specification:

Directly connected type, AC 10V~750V

AC 1kV~35kV should externally connect a PT of secondary voltage 100V

Accuracy class: 1.5