

使用说明书

安装, 调整, 维修设备前, 请阅读并理解说明书。

	注 意
	危险电压会引起触电和燃烧。 调整、维修前请先切断电源。

1 概述

1.1 主要用途

LA39系列按钮功能齐全, 能充分满足国内外数控程控装置、电子电器控制的需要, 广泛应用于交流50Hz(/60Hz) 660V以下及直流440V以下的机床、纺织、船舶、航空、汽车、烟草、电力、电讯医疗器械等领域, 做控制电路、信号、联锁等配套使用。

1.2 型号的组成及其代表意义

LA 39- □-□ □ □ □ / □ □ □ □
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫

- | | |
|-------------|--------------|
| ① 按钮型号 | ⑦ 符号片代码 |
| ② 设计序号 | ⑧ 钮片颜色 |
| ③ 头部类型及中座形式 | ⑨ 带灯钮的灯的电压代码 |
| ④ 常开触头数量 | ⑩ 旋钮或钥匙钮动作位置 |
| ⑤ 常闭触头数量 | ⑪ 外壳防护等级 |
| ⑥ 按钮系列 | ⑫ 辅助代码 |

2 安全使用和注意事项

- 1) 在安装、调试、维修前必须先切断电源;
- 2) 导线应符合使用要求;
- 3) 安装时要防止金属粉末等杂质进入产品内部;
- 4) 应在额定电压和电流下使用。

3 技术特性

3.1 技术参数

- 1) 额定绝缘电压(Ui): 660V;
- 2) 约定发热电流(Ith): 10A;
- 3) 额定冲击耐受电压(Uimp): 4000V;
- 4) 工频耐压: 1890V AC有效值 50Hz.60s;
- 5) 电寿命: 60×10⁴ 次;
- 6) 使用类别: AC-15、DC-13;

各使用类别下额定工作电压Ue (V) 对应的额定工作电流Ie (A) 见表1;

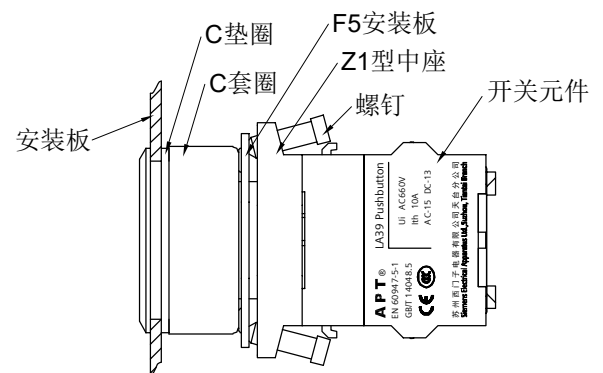


图2

表1

AC-15	Ue	660V	380V	220V	110V	48V	24V
	Ie(瞬动型)	0.8A	1.5A	2.5A	5A	10A	10A
	Ie(蠕动型)	2A	4A	6A	10A	10A	10A
DC-13	Ue	440V	220V	110V	48V	24V	/
	Ie(瞬动型)	0.2A	0.4A	0.8A	1.8A	3.6A	/
	Ie(蠕动型)	0.25A	0.5A	1A	3A	6A	/

7) 发光元件额定工作电压对应的电压代码见表2。

表2

代 码	20	21	22	15	23	16	24	25	17	18	26	27	36	28	33	35	31	40	41	42	37	32	38
电 源	AC/DC																50/60Hz AC						
额定电压(V)	5	6	12	15	24	30	36	48	63	75	110	127	150	220	270	440	220	230	240	250	270	380	440

- 8) 额定限制短路电流试验时所配的熔断器型号：NT00-10A；
- 9) 最大导线截面：1.5mm²，最小导线截面：0.5mm²，连接至接线端子最多根数：2；
- 10) 接线端子的型式：螺钉接线式，组合螺钉的规格为M3.5，拧紧力矩0.8N·m；
- 11) 旋钮旋转操作力矩<0.5 N·m；头部旋转操作力矩<0.2 N·m(不含开关座)；
- 12) 头部防护等级：A型头部：除ZY、ZL、Y/Y5、TCY、A3A4A5旋钮 IP40外，其余型号IP54；
B型头部：IP40，C型头部：除ZY IP40外，其余型号IP54。

3.2 工作环境

- 1) 使用环境温度：-25℃~+55℃，24h内的平均温度不超过+35℃；
- 2) 空气相对湿度：≤90%，当温度超过+40℃时相对湿度不大于50%；
- 3) 安装地点的海拔不超过2000m；
- 4) 安装类别：II；
- 5) 污染等级：3级；

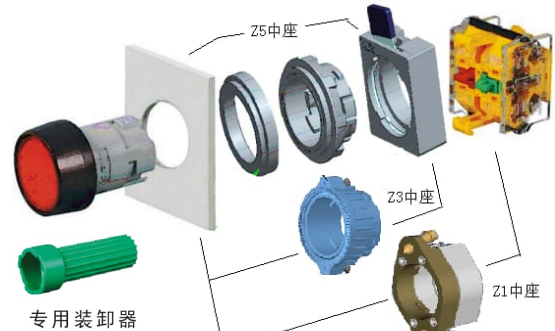


图1

4 安装步骤与安装尺寸

4.1 安装步骤

- 4.1.1 将按钮头部由面板前方插入安装孔(图1)。
- 4.1.2 旋入中座，用≤0.25N·m力矩均匀拧紧两端螺钉，两端螺钉需拧紧同等距离，使中座与安装板保持平衡，如面板为塑料等其它非金属材料，可在面板后垫上一块安装板(如样本产品附件F5)后再安装(此步骤适用Z1、Z2中座)。
- 4.1.3 将垫圈从面板的反面套入按钮头部，可根据面板厚度调整正反面安装(只Z5中座需要)。
- 4.1.4 将螺纹套、并帽件从面板的反面套入按钮头部，并顺时针方向转约30°，使螺纹套中两个弹性凸台卡入按钮头部缺口中，然后拧紧。注意螺纹套上的白色标示朝上方。将中座主体套入螺纹套，再将快锁件按箭头指示方向扳动使其锁紧，快锁件应在正上方。(此步骤适用Z3、Z4、Z5中座)
- 4.1.5 扣上开关座(在开关座与中座主体分开时)。

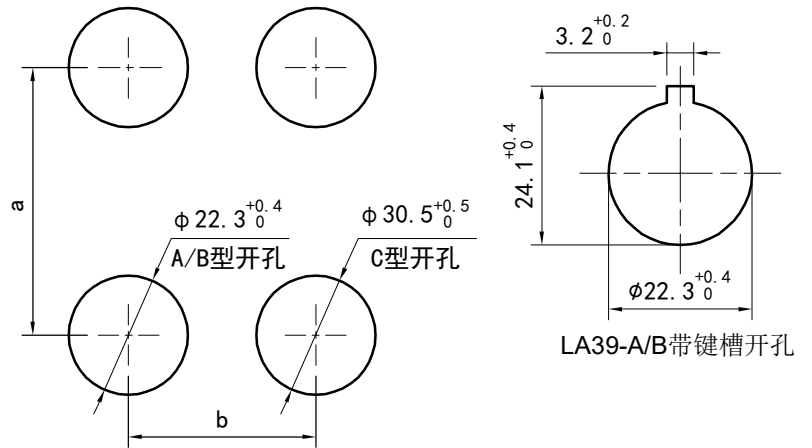
提示：

- 1、所有C型按钮配Z1中座默认附带一个C垫圈和F5。
 - a. 安装板厚≤1.5mm时，C1-Y(S)型号装配图2所示2个C垫圈；
 - b. 安装板厚1.5-3mm时，装配C垫圈1个；
 - c. 安装板厚3-6mm时，所有型号不装C垫圈。
- 2、如果安装旋钮和钥匙钮产品配Z3中座时，需加装一只定位垫圈(止转用)。
- 3、与附件F1配套使用时，须去掉按钮头部自带的黑色密封圈。
- 4、头部配合使用除F1外的附件不承诺IP等级。

4.2 安装尺寸(单位: mm)

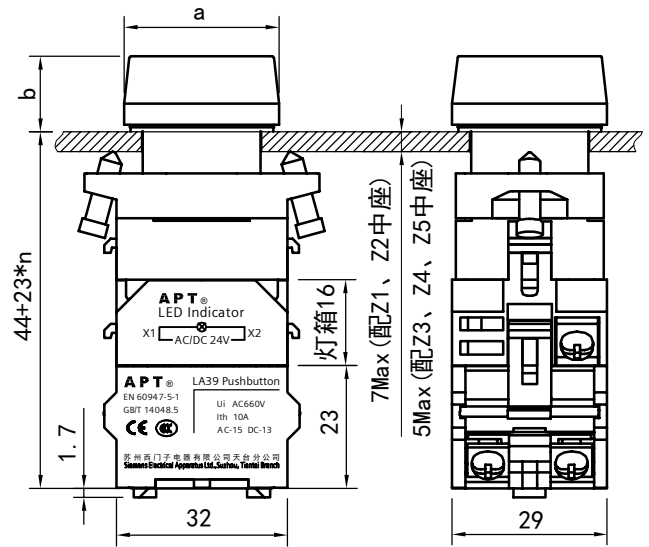
4.2.1 各按钮安装尺寸见下表

按钮型号	a		b	
	A、B型	C型	A、B型	C型
一般钮	≥50	≥60	≥32	≥40
高位钮				
钥匙钮				
短旋钮			选用Z3中座最小尺寸40 选用Z5中座最小尺寸35	
40蘑菇钮	≥50	≥60	≥42	≥50
长旋钮				
紧停钮				
60蘑菇钮	≥62	≥62	≥62	≥62



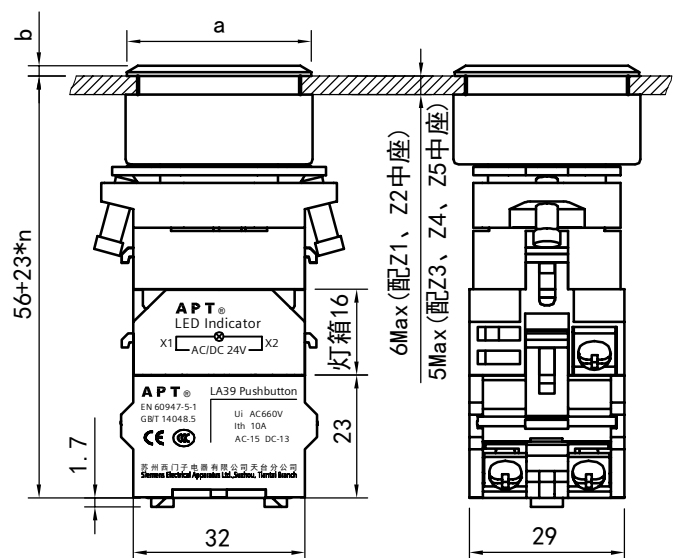
4.2.2 LA39-A/B型各按钮外形尺寸见下表

按钮型号	a		b
	A型	B型	
一般钮	Φ29	Φ29.7	14
高位钮	Φ29	Φ29.7	19
40蘑菇钮	Φ40		26
60蘑菇钮	Φ60		26
旋转释放紧停钮	Φ40		24.5
钥匙释放紧停钮	Φ40		24.5
拉拔式紧停钮	Φ40		26
触发式紧停钮	Φ40		37
钥匙钮	Φ29		21
旋钮	Φ29	Φ29.7	26.5





4.2.3 LA39-C型各按钮外形尺寸见下表

按钮型号	a	b
一般钮	Φ34.5	2
高位钮	Φ34.5	7
40蘑菇钮	Φ40	14
60蘑菇钮	Φ60	14
旋转释放紧停钮	Φ40	15
钥匙释放紧停钮	Φ40	13.5
旋钮	Φ34.5	15
钥匙钮	Φ34.5	2



Instructions

Read and understand these instructions before installing, operating, or maintaining the equipment.

	 WARNING
	<p>Hazardous voltage can cause electrical shock and burns Disconnect power before proceeding with any work on this equipment</p>

1 Summary

1.1 Main uses

LA39 series pushbutton is fully functional. It could meet the demand of domestic and overseas digital control (programme control) equipment and electrical and electronic control. It's widely used in machine tool (AC power 50/60Hz, AC voltage 660V/DC voltage below 440V), textile industry, ship areas, aviation, automobile, tobacco industry, electric power, medical devices etc. And supporting the use of circuit control, signal control, interlock.

1.2 The composition and significance of models

LA 39- - /

- | | |
|------------------------------------|---|
| ① Pushbutton type | ⑦ Symbolic code |
| ② Design number | ⑧ Button color |
| ③ Operator style and bracket style | ⑨ Voltage code for pilot lamp |
| ④ Number of NO | ⑩ Action of rotary switch or key switch |
| ⑤ Number of NC | ⑪ Operator shell protection grade |
| ⑥ Pushbutton Series | ⑫ Assist code |

2 Notes

- 1) We must turn off power before installation and recondition.
- 2) The wire must meet the requirement.
- 3) Cover the switch during installation to prevent impurities into product, such as metal powder.
- 4) The switch should be used in rated voltage and electric current.

3 Technical feature

3.1 Technical Parameters

- 1) Rated insulation voltage (Ui): 660V
- 2) Conventional thermal current(Ith) : 10A
- 3) Rated impulse withstand voltage (Uimp): 4000V
- 4) Power frequency withstand voltage: 1890V AC effective value 50Hz.60s
- 5) Electrical life: 60x10⁴ times
- 6) Operation class: AC-15、DC-13;
Rated operational current Ie for rated operational voltage Ue see the table 1:

Table1

AC-15	Ue	660V	380V	220V	110V	48V	24V
	Ie (Instantaneous)	0.8A	1.5A	2.5A	5A	10A	10A
	Ie (Peristaltic)	2A	4A	6A	10A	10A	10A
DC-13	Ue	440V	220V	110V	48V	24V	/
	Ie (Instantaneous)	0.2A	0.4A	0.8A	1.8A	3.6A	/
	Ie (Peristaltic)	0.25A	0.5A	1A	3A	6A	/

7) Rated operating voltage corresponds to the voltage code see table2;

Table2

Code	20	21	22	15	23	16	24	25	17	18	26	27	36	28	33	35	31	40	41	42	37	32	38
Power supply	AC/DC																50/60Hz AC						
Voltage(V)	5	6	12	15	24	30	36	48	63	75	110	127	150	220	270	440	220	230	240	250	270	380	440

- 8) Type of fuse in test of rated conditional short-circuit current: NT00-10A;
- 9) The largest cross-section: 1.5mm², the least cross-section: 0.5mm²,
the maximum number of conductors connected to the terminal: 2;
- 10) Diameter of the thread M3.5, tightening torque 0.8N·m;
- 11) Rotate pushbutton operating moment <0.5 N·m; Pushbutton head operating moment <0.2 N·m; (without switch body)
- 12) Head protection grade: type A head: except the ZY, ZL, TCY, A3A4A5 selector switch IP40 outside, the rest of the models IP54, type B head: head IP40, type C head: except the ZY IP40 outside, the rest of the models IP54.

3.2 Work Environment

- 1) Environment temperature: -25℃~+55℃, average temperature can't exceed +35℃ in 24 hours;
- 2) Relative air humidity: ≤90%, if the temperature is +40℃, the ambient atmosphere humidity is less than 50%;
- 3) The altitude is less than 2000m;
- 4) Installation category : II;
- 5) Pollution severity: class 3;

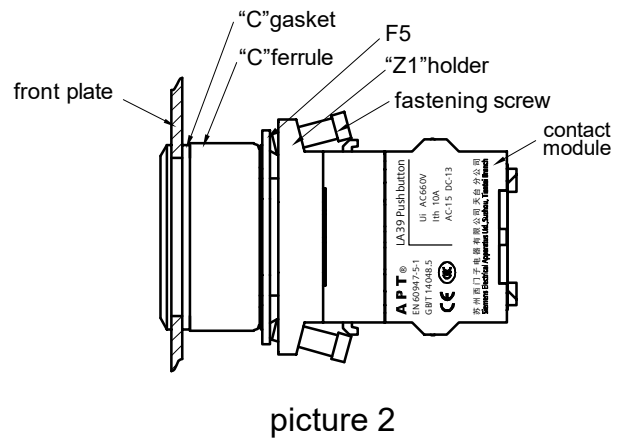
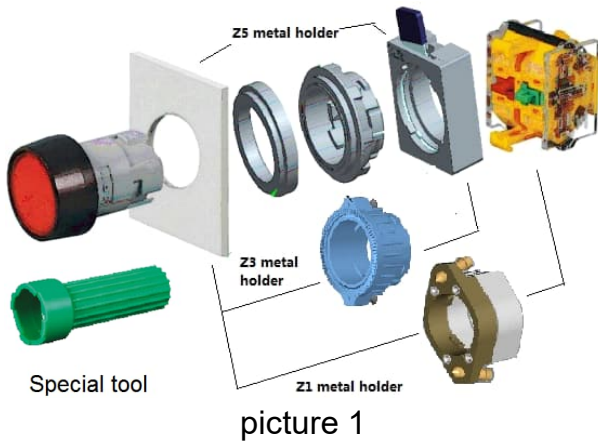
4 Installation method and Installation dimension

4.1 Installation method

- 4.1.1 Insert the operator into the mounting hole from the front of panel.
- 4.1.2 For Z1 Z2 type, twist the mounting base in the back of the panel, fasten both screws (max torque is 25N·cm). Make the balance with the mounting plate, When the panel material is plastic and other non-metal, a mounting plate could be put at the back of the panel before mounting; Inset washer into pushbutton from the back of the panel. According to panel thickness, it could change installation. (Only for Z5 type);
- 4.1.3 The gasket from the opposite side of the panel set into the button head, positive and negative can be adjusted according to the thickness of the panel installation (Z5 only need)
- 4.1.4 Install the screw nut and fixing device from the back side of the panel by turning 30° clockwise of the screw, then fasten the fixing device by the special assemble element. Noting the white mark of the screw nut must be upper and aligning the nick with the actuator housing. Sheath the fixing device with the body of flange, and then fasten the body by pushing the locking piece according to the arrow. The locking piece must be upper (it's suitable for Z3 Z4 Z5 type).
- 4.1.5 Button on the contact module (in separate contact module and the bracket)

Tips:

1. All C button to match the Z1 a default with a C gasket and F5.
 - A. Mounting plate thickness ≤ 1.5 mm, the C1-Y(S) model increase as shown in figure 2 2 gasket.
 - B. when Mounting plate thickness 1.5-3 mm, add 1 C gasket;
 - C. when installing thickness 3-6 mm, all models don't C gasket 2, If Z3 bracket rotary switch or key switch, it need add a piece of space gasket.
2. When switch or key switch installed with Z3 holder, the scotch ring must be used.
3. When the product installed with F1 accessory, the black seal ring must be took off.
4. Except for the F1 accessory, the head does not commit to the IP level when used with other accessory.

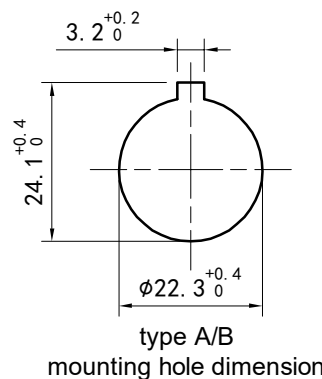
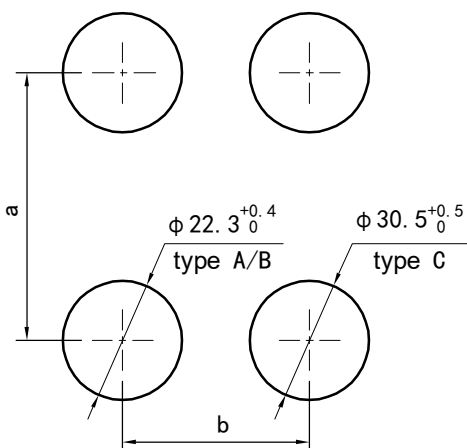


4.2 Installation dimension (units: mm)

4.2.1 The mounting dimensions see the below table

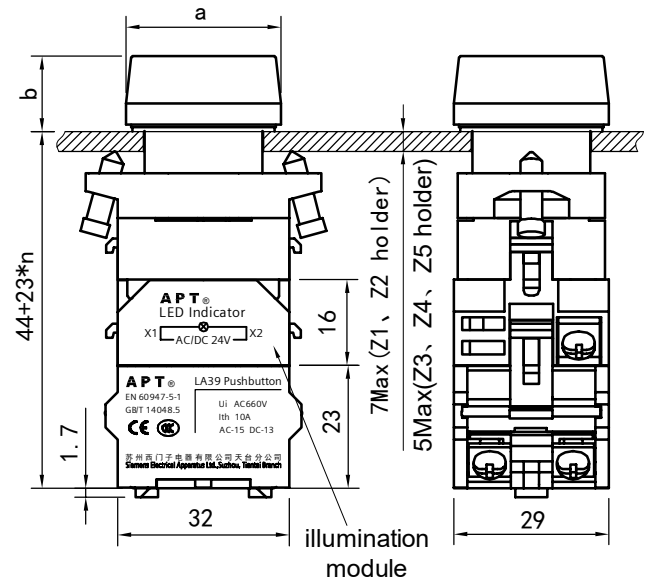
pushbutton types	a		b	
	type A/B	type C	type A/B	type C
flush pushbutton	≥ 50	≥ 60	≥ 32	≥ 40
raised pushbutton				
key-operated switch				
short selector switch				
40mm mushroom actuator	≥ 50	≥ 60	≥ 42	≥ 50
long selector switch				
E-stop				
60mm mushroom actuator	≥ 62	≥ 62	≥ 62	≥ 62

The minimum size of Z3 hold is 40mm
The minimum size of Z5 hold is 35mm



4.2.2 The formal dimensions of LA39-A/B pushbutton see the below table

Types	a		b
	type A	type B	
flush pushbutton	Φ29	Φ29.7	14
raised pushbutton	Φ29	Φ29.7	19
40mm mushroom actuator	Φ40		26
60mm mushroom actuator	Φ60		26
twist to release E-stop	Φ40		24.5
twist to release E-stop	Φ40		24.5
pull to release E-stop	Φ40		26
E-stop with trigger action	Φ40		37
key-operated switch	Φ29		21
selector switch	Φ29	Φ29.7	26.5



4.2.3 The formal dimensions of LA39-C pushbutton see the below table

Types	a	b
flush pushbutton	Φ34.5	2
raised pushbutton	Φ34.5	7
40mm mushroom actuator	Φ40	14
60mm mushroom actuator	Φ60	14
twist to release E-stop	Φ40	15
key to release E-stop	Φ40	13.5
selector switch	Φ34.5	15
key-operated switch	Φ34.5	2

